

ERNEST BORN
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**THE
ARCHITECTURAL RECORD**

1936

12

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THE ARCHITECTURAL RECORD

VOLUME 80 • NUMBER 6 • DECEMBER, 1936

NEWS OF THE MONTH

FLOATING RAILWAY. Photograph by Zimmerman

MUSEUM PLANNING. By Philip N. Yountz, A.I.A., President of the American Federation of Arts

PORTFOLIO OF EXHIBITION BUILDINGS

Exhibition Building for a Newspaper, Cologne, Germany—Hans Schumacher, Architect • A Community Exhibition Building Proposed for Darien, Connecticut—By A. Lawrence Kocher and Albert Frey • Exhibit in A Conference Room for a Corporation—Walter Gropius, Architect • Gallery of Architecture, Milan Exhibition, Triennale, 1936—Agnoldomenico Pica, Architect • Display of Architectural Drawings and Photographs, also Community Planning—A. Branchetti, A. Pasquali, Cesare Pea, Architects • Swiss Section, Milan Exhibition, Triennale, 1936—By Max Bill • The Hall of Honor, Berlin Exhibition, 1934

PORTFOLIO OF CURRENT ARCHITECTURE

House of S. M. Sadi, Northport, Long Island—Designed by S. M. Sadi • House for Miss Hague, Pasadena, California—Van Pelt and Lind, Architects • House for H. J. Alley, Brentwood Heights, Los Angeles, California—Ralph C. Flewelling, Architect • WWJ Broadcasting Station, Detroit, Michigan—Albert Kahn, Inc., Architects and Engineers • The Third Unitarian Church, Chicago, Illinois—Designed by Paul Schweikher, Inc. • Suffolk Downs Race Track, Boston, Massachusetts—Mark Linenthal, Engineer • New Detroit Federal Building, Detroit, Michigan—Robert O. Derrick, Inc., Architects • Jackson County Courthouse, Kansas City, Missouri—Keene and Simpson, Wight and Wight and Frederick C. Gunn, Architects; Edward F. Neild, Consulting Architect • Competition for the Design of a Typical Building for the New York World's Fair of 1939—First Mention, George Lyman Paine, Jr.; Second Mention, Peter Copeland; Third Mention, Peter Coke Smith • Corinth Museum, Corinth, Greece—W. Stuart Thompson, Architect, of Thompson and Churchill

TECHNICAL NEWS AND RESEARCH

The Technician on the Cultural Front. By K. Lönberg-Holm and C. Theodore Larson
Television Networks
Acoustical Designs
Radio Studios Designed for Control of Sound. By Michael Rettinger, Acoustic Engineer
Soundproofed Windows. Tests by Dr. J. E. R. Constable, National Physical Laboratory, England
Control Equipment

BOOK REVIEWS

BUILDING IMPROVEMENT OVER 1935 APPROXIMATES 70 PER CENT.
By L. Seth Schnitman, Chief Statistician, F. W. Dodge Corporation

MARKETING NEWS OF THE BUILDING INDUSTRY

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36 (adv.)

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By the use of Formica elevator doors, and Formica interiors on elevator cabs, attractive and harmonious complete jobs for lobbies and elevators are now possible. The picture shows some elevator doors recently installed at the McCurdy Hotel at Evansville, by the Elevator Locks Company, Peoria, Ill.

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FOR BUILDING PURPOSES

THE ARCHITECTURAL RECORD

VOLUME 80 • NUMBER 6 • DECEMBER 1936

BUILDING TYPE STUDIES

To enable general practitioners to revise neglected check lists and specifications in the light of experience developed by specialists The Record will, beginning with the January 1937 issue, publish a monthly series of building type studies. Each study will be prepared by a group of specialists—architects, engineers and others—who have recently worked out problems connected with the type of building under discussion, the purpose being to review authentic current practice with respect to plan, construction methods, materials and equipment.

Each study will constitute an addition to the customary contents of the magazine and will be illustrated with photographs, plans and detail drawings. The illustrations for the series as a whole, by picturing architectural features of new significance associated with many building types, will give a fair idea of modern trends of expression in design and of the practical considerations motivating the trends.

BUILDING TYPE STUDY No. 1 — JANUARY ISSUE

RETAIL STORES, SPECIALTY SHOPS, SHOWROOMS, RESTAURANTS

A range of establishments typical of retail trade has been selected for analysis in the opening study of the Building Type Studies series, because there has been a notable advance in construction of new, and particularly in modernization of old, stores which seems likely to continue. In the buyers' market of the depression, survival of individual retail stores depended generally upon restudy of merchandising policy and method, together with simplification of overhead. The consequent modifications of theory and practice in retail trade have brought about important changes in store design.

AMONG THE CONTRIBUTORS TO THE JANUARY STUDY ARE:

NELSON MILLER, Chief, Retail Trade Section, Marketing Research Division, U. S. Department of Commerce.

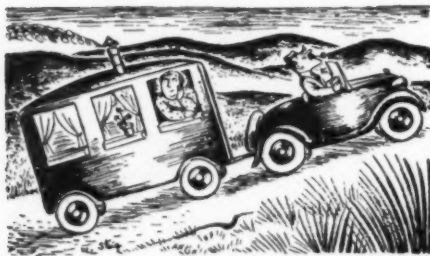
WILLIAM MUSCHENHEIM, architect, designer of the Hotel Astor Grill, New York City.

ELEANOR LEMAIRE, department store designer.

JOHN WEBER, architect and showroom designer.

PERCIVAL GOODMAN, architect and jewelry store designer.

B. SUMNER GRUZEN, architect and designer of cash and carry stores.



Drawing by Steig, Courtesy The Nation

AUTO TRAILERS OF STUDENTS DOT CAMPUSES

(By Associated Press)

Dormitories on wheels are rolling onto the American college campus.

Almost as portable as a student's typewriter, they begin as trailers behind automobiles and end as campus homes. In them, at least four schools in the South and West are finding an answer to two questions: College housing and student finance.

Has Electric Lights.

A "trailer town" has grown up around Utah's State Agricultural College at Logan. It boasts electric lights, running water, and vegetable cellars. It has a "mayor," Julian Thomas of Heber City, Utah.

The town was born a year ago

Question: Is a Trailer Home or an Accessory?

Colt's Decision Will Decide Motor Squatters' Lot

ORCHARD LAKE, Mich., Oct. 10.—Justice of the Peace Arthur F. Green wrestled today with the question of whether a trailer is a house or an automobile accessory. His decision may establish a precedent.

Michigan Town Is First in U. S. To Bar Trailers

Home on Wheels Fails to Comply With Law, Justice Rules

ORCHARD LAKE, Mich., Nov. 13 (UP).—This Michigan town, near Pontiac, today became the first community in the United States to ban automobile trailers.

The ruling was made by Justice of the Peace Arthur R. Green who held that trailers are human dwellings and must conform to a village building ordinance requiring at least 500 cubic feet of space per occupant.

Mildred Gurnasol, Pontiac factor worker, bore the brunt of Justice Green's ruling. He was fined \$1, plus \$3.10 costs.

"We gave him a break," said Justice Green, "because we knew this was an important test case."

Gurnasol pleaded that the decision would affect a \$10,000,000-a-year industry—an industry which twenty-seven manufacturers, now

TAIL WAGS DOG AS TRAILERS BOW AT MOTOR SHOW

1,000,000 people will be living in trailers by the end of this month, estimates the American Automobile Association; 250,000 trailers will be sold next year, says the industry; and within twenty years 20,000,000 Americans will be trailer-housed, according to economist Roger Babson. Be this as it may, the nation's newest and fastest-growing industry stepped full blown into the limelight of last month's New York Auto Show. Leasing one floor, a dozen or so of the largest companies showed a wide range of models priced from \$400 to \$2,500 and offering accommodations for 2, 4 and 6 persons.

The New York show served merely to highlight the increasing attention which the trailer industry is receiving. In its rapid rise Gilbert Seldes sees indications of "a movement of population besides which even the Crusades will seem like a Sunday School picnic." Social, economic and political repercussions there certainly will be, but so far the use of trailers is largely confined to (a) persons with independent incomes, (b) persons on extended vacations, (c) itinerant workers in seasonal industries, and (d) commercial and institutional users. However, from Detroit comes a report of a trailer city designed for year-round use by tenants permanently employed in the motor capital. They have electric, water and sanitary connections; groceries are delivered, garbage collected. "They are paying for the trailers on time at rates lower than rentals. And they can move whenever they want to. . . . All they have to do is—like the early Texans—put out the fire, call the dog and move."

The use of the trailer by such diverse groups naturally leads to an increasing range of body types and an expanding demand for services and accommodations. Already industry and municipal governments are offering these. W. H. Ludlow, writing in the *American City*, points out that a "trailer-town" presents problems in planning and management, quite different from those of the "tourist camps" which most cities now provide. The towns should be laid out in streets,

with properly landscaped plots at least 25 by 35 feet, "so that the trailerite will not look right into his neighbor's window. . . . Minimum facilities include toilets, washrooms, showers, water and electric outlets, to which are usually added a social hall, various types of recreation and amusement . . . stores, cafeterias and laundries are also needed to make the town complete."

Trailers raise vexing problems

But planning is only one aspect of these trailer towns. "Who should run them? How should they be taxed?" the *American City* asks. "As to operation and taxes, some cities may prefer to manage trailer parks directly . . . others may prefer to lease municipally-owned camps to private operators, thus retaining ultimate control and realizing an income, but placing details of management in the hands of an experienced operator. Still others will merely tax privately-owned camps by means of the property tax and special license fees."

As to the regulation of trailers themselves, methods vary considerably from state to state. In Florida the fee is a flat \$12, while in Pennsylvania they are taxed merely as trucks, according to size and weight. *Trailer Travel*, in a recent survey, finds that "registration fees are required in 40 states, while 42 states require registration. Reciprocity period granted non-resident trailers in every state except one." They are taxed as personal property in 28 states. Numerous limitations on size, weight, design are found; 15 states require safety chains or emergency couplings; brakes are required by 16 states if weight exceeds a minimum; maximum length (with tow cars) varies from 35 feet in some states to 85 feet in others.

Sanitation, education, control—all these problems rise to vex the authorities. Since sanitary equipment in the trailers varies widely—from none in some types to complete bath and kitchen in others—the accommodations of the trailer towns must likewise vary. This problem arose at a recent conven-

tion of the American Health Association. Speaking of "this recent innovation" as a possible source of health risk, V. M. Ehlers of the Texas State Park Commission warned that "because of its compact convenience it furnishes the owner with a tendency to stop just anywhere, regardless of the absence of a pure water supply and proper sewage and garbage disposal." And California, threatened with 50,000 trailer children this winter, asks an even more pertinent question: Who will pay for their education? Because they are not citizens of that "or any other state" Vierling Kersey, Superintendent of Public Instruction, thinks "the Federal Government should defray the costs of their education."

The problem of control crops up in the "trailer-town" at the nation's Capital, where no trailers are allowed to stay more than two weeks, and no local trailers are permitted at all. But the trailerites' welcome varies from town to town. In the Southwest, according to F. L. Minnegrode, "a battle is brewing over the treatment of trailer tourists." Writing in the N. Y. Times, Mr. Minnegrode sees "the local merchants lined up against the hotel and tourist camp proprietors" in the discussion as to whether trailers will be "welcomed or banned." Sarasota, Florida, existing on tourists of whatever variety, welcomes trailerites to its already overcrowded municipal trailer town. Huntington Beach, California, likewise has one, while permanent convention grounds for the two large associations—American Trailer and Tin Can Trailer—at Sandusky, Ohio, and Manistee, Michigan, annually attract not only trailerites but manufacturers of trailers "and every manufacturer who has something which he feels the trailer owner ought to add to his conveniences."

For various reasons "some cities may fight trailers, ban them from parking within city limits and tax them heavily," the *American City* warns. That is precisely what happened in Orchard Lake, Michigan, last month, when trailers were outlawed in the town, trailer owners fined. But, by and large, the cities cannot let "changes brought about by trailers catch them unawares. . . . They will regulate and

control the trailer to make it a new but integral part of the city pattern."

Trailerite will get what he wants

Whether the cities welcome or bar the trailerite will largely depend upon local politics; but the indications are that, regardless, the trailerite will get the increasingly specialized services he demands. Especially interesting in this light is the recent announcement of General Trailers Corporation: "the automobile trailer is initiating not only a new business but a new industry. . . . In anticipation of its rapid expansion, we have created a 5 Point Plan that will provide the greatest possible degree of comfort and convenience for trailer owners.

"The first point in this plan is the manufacture of trailers. . . . The second point is the location and operation of trailer camps throughout the country. It is proposed to operate two different types of camps for two distinct purposes; (1) trailers 'stop-over' camps placed at approximately 250-mile intervals between leading centers of population on main highways, and (2) trailers 'tourist' camps to be located wherever possible on the shore of a lake, a river or on the seashore. Complete accommodations will be offered in these camps for a vacation of any duration or, where the climate permits, for a permanent home.

"Point No. 3, the rental of the trailers: It is proposed to operate an ever-increasing rental service through which trailers may be rented for a day, week, month or season. . . . it will be possible to rent a trailer from any distributor, travel to any part of the United States desired and turn the trailer into the distributor located nearest to the ultimate destination.

"Anticipating the need for winter storage facilities, each main building of the trailer camps will have a connected sizable floor area which will be used during the summer months for dancing, games, etc., and inclosed during the winter for dead storage of trailers. The fifth and final point is the organization of 'General Trailers Association'."

Companies use them also

The trailer is by no means confined

to personal uses, however. Indeed, as the magazine *Steel* wisely points out, the larger proportion of registered trailers in 1935 were commercial units. And the rapid adaptation of the trailer to commercial and institutional services of all types is of special significance (*Technical News*, August, 1936, pp. 160-164). Ever alert to new markets, *Steel* estimates the 1937 production of trailers at 250,000 units, whose consumption of steel will be "impressive."

Impressive, also, will be the consumption of standard household equipment. Since the industry, at the present stage, *fabricates* the shell and *assembles* the equipment, it offers a large potential market for the equipment industries. Already a wide range of equipment—stoves, refrigerators, plumbing and heating units, radios and furniture—is being built to the industry's own specifications. And, under the highly competitive conditions already effective in the trailer industry, the use of equipment will inevitably increase on both a quantitative and a qualitative scale.

Where does this leave the designer?

The rapid rise of the trailer industry presages entirely new problems of design. 250,000 will be built next year; who will design them—architect, engineer, automotive designer, industrial designer? And on what basis? At the present time the trailers show clearly the effect of automotive design on the shell: but the interior equipment is that of a modern house, scaled down in bulk and weight to meet the special requirements of the trailer. Under increasing pressure, and at an accelerating speed, these two design trends will merge into a new concept of domestic shelter—a concept which appears likely to have a profound effect on the entire building industry.



Photo by Wide World



PRIZE WINNER, YET NOT WINNER OF THE PRIZE, George Lyman Paine, Jr., young Manhattan architect, last month received a "cash consideration" of \$1,000 for his design of a typical building for New York's World's Fair. Paine's design was awarded first prize in the recent contest "to discover new talent" for the Fair; but the award was stalemated when Paine was discovered to be "technically ineligible" according to contest rules. The problem was finally solved by awarding no First Prize, giving the \$1,000 to Paine. Second prize of \$750 went to Peter Copeland, Manhattan; third prize of \$500 to Peter C. Smith, Norwalk, Conn. (Prize-winning designs appear on pp. 462-464, this issue.)

Picture shows Architect Paine (left) getting the \$1,000 check from Fair President Grover Whalen (center) while Percy Straus, Stephen F. Voorhees and Robert D. Kohn look on.

WORLD'S FAIR FINDS ASH-MOVING TICKLISH JOB

Soil conditions of the Fair site made news when the *Herald Tribune* (N. Y.) quoted Hugh Moran, son of one of the partners of Moran & Proctor, consulting engineers. Mr. Moran was reported to have described conditions at the site as presenting all sorts of structural difficulties, and to have described the type of foundations they would require. These statements were next day denied by the firm in a letter to President Whalen as "totally unauthorized" and "contrary to facts." The letter went on to say that no unusual problems were contemplated and that the "type of foundations described (in the *Tribune* article) . . . are so fantastic that they would not be considered by us for this or any other project."

Unusual, however, the soil conditions at the Fair remain. Beneath the 3-foot vegetable mat of the Meadows lies at least 70 feet of silt—a tidewater swamp from the glacial era. Tests have disclosed definite tidal "waves" in this mud, a subsoil movement which makes excavation and filling a precarious job. It was these conditions which determined the concentration of buildings on the northern end of the site; and it is these conditions which have led to one of the most interesting dirt-moving jobs in this country. On this site for 35 years have been dumped

the ashes and rubbish of Brooklyn and Queens—a dump pile which reached 90 feet in spots and an average elevation of 50 feet. Boring showed that the rubbish had settled 25 feet into the swamp muck.

Far from being a liability, the *Engineering News-Record* points out that these ashes "suddenly became a blessing. In fact, it is doubtful whether the site would have been economically feasible without the huge supply of dry fill immediately available. Hydraulic filling from the Bay was undesirable, for a wet fill over the swamp muck would have been unstable," and dry fill is scarce in New York in the quantities required for the Fair grounds. Therefore, not only the grading plan, but the physical plan of the Fair itself was based on the amount of material available in the dump, and by careful planning "a rolling topography, much more pleasing than the existing flat meadowland, was laid out over the full site to exactly balance the cut and fill." Even the size of the artificial lakes which will ornament the grounds was figured in this manner.

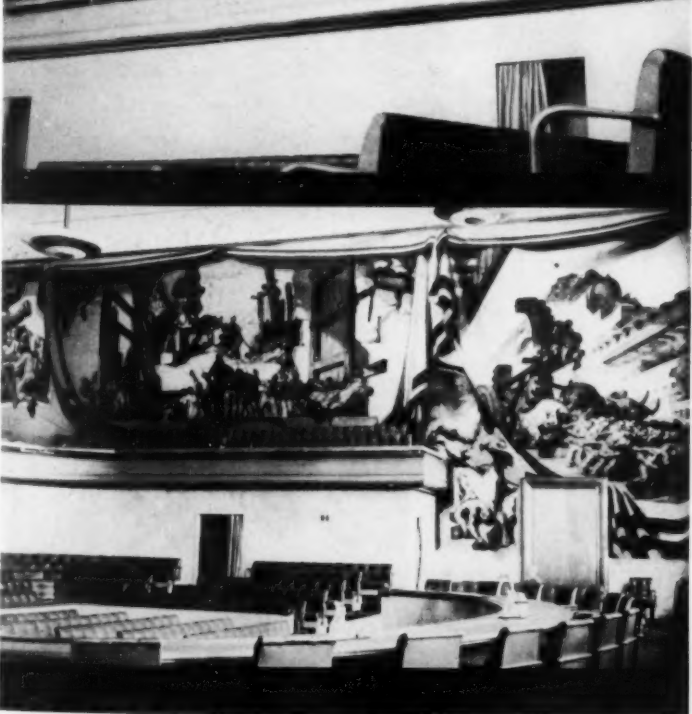
The actual dirt moving "is a far from simple job." Working in three 7½-hour shifts per day, the contractor moves from 40,000 to 50,000 cubic yards. All operations follow a careful

plan which was evolved before bids were submitted, since the contractor must take full responsibility for mud wave, and any ground heaving must be corrected at his expense. Two troublesome features of the job are the presence of metal rubbish in the ashes—"old automobiles, plumbing fixtures and hundreds of domestic hot water tanks"—and the deep-burning fires which the excavations have uncovered.

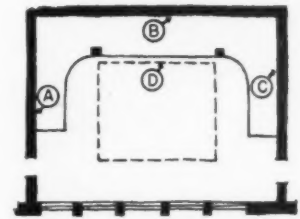
- Estimating an average daily attendance of 250,000 and an occasional daily maximum of 800,000 visitors, World's Fair engineers gave the results of their traffic studies to the world. Pointing out that the Fair would present a traffic problem equal to a city the size of Cleveland, Grover Whalen said that the Fair "will have its own port, its own rapid transit line, its own bus system, its own police and fire departments." Transportation to the site by means of train, trolley, subway, boat and motor will be provided; and this traffic will be handled by an intramural bus system which will include express busses circling the Fair ground and local busses on the inside roads. All private motors will be parked in convenient spots and bus and pedestrian traffic within the Fair grounds will be carefully segregated.

SERT MURALS ADORN NEW COUNCIL ROOM OF LEAGUE OF NATIONS

Wide World Photos



Recently unveiled in the Council Room of the Palace of the League of Nations in Geneva are the murals of the Spanish artist, José Sert. Employing a typically Sertian technique, heroic in scale and subject matter, the panels are executed in monochrome. Covering three walls and the ceiling of the Council Chamber, the panels portray the not-yet-realized liberation of the human race: exhausted by war, humanity is shown throwing off the chains of prejudice and hate to win peace and freedom at last.



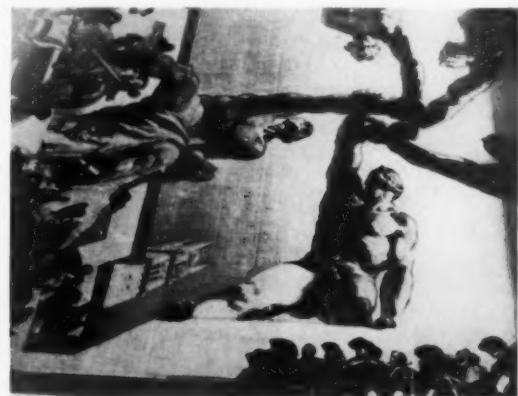
After a decade of erratic activity, the Palace of the League of Nations is now nearing completion on a hill overlooking Geneva. The selection of architects caused a storm of discussion and the design was finally awarded to a group of five architects, of whom Le Corbusier and Jeanneret were at first members. Called "a cocktail of a project" because of its eclectic design, the building has had a colorful history. In 1934 construction stopped altogether due to a shortage of funds—the League members failed to pay up—and the weekly *Beaux Arts Journal* found that "budget overrun, money out . . . the artists to whom the States have awarded commissions are asking themselves if they are ever going to embellish a structure over which there has been so much discussion." Work was resumed, however, and the artists—including Sert—have practically completed the building.

In his middle sixties, José Maria Sert is one of the world's most successful muralists. His list of commissions in Europe is impressive, including murals for the Royal Palace and the Palace and Chapel of the Duke of Alba in Madrid (both of which were destroyed in last month's air raids), the Municipal Building in Barcelona, and many large residences in London and Paris. In this country he is known for his "Marriage of Figaro" in the new Waldorf-Astoria and for his Rockefeller Center murals, of which these League murals are highly reminiscent.

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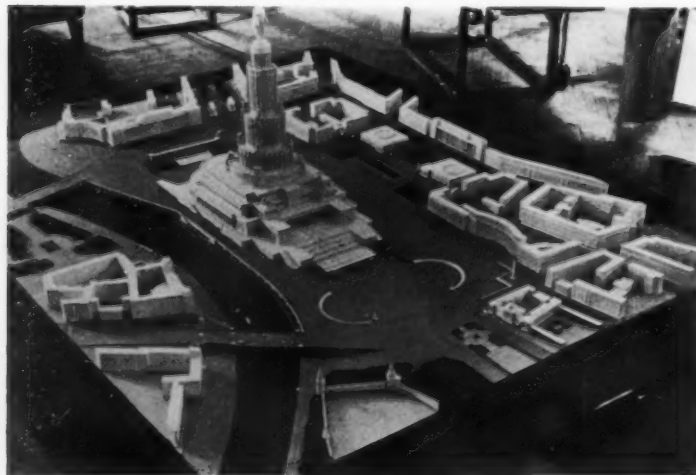
Photos by Sovfoto



A general view of the model of greater Moscow, with the expanded radial-circular boulevard system lighted up.



A detail of the city's heart showing the ancient Kremlin and new Palace of the Soviets. The fountain pen gives some idea of the scale of the model.



A large-scale model of the Palace of the Soviets now under construction, with various governmental buildings around it and a corner of the Kremlin at the extreme bottom.

MOSCOW PLANS FOR THE FUTURE

Ancient Czarist city rebuilds on scientific lines

The Moscow Planning Commission in 1931 was faced with two concurrent problems—(1) the immediate expansion of municipal services and enterprises to take care of one of the most rapidly growing cities in the world and (2) the integration of these services and enterprises with a long-range plan which, at that time, had not yet been evolved. It was only after a long period of discussion that the basic principles of reconstruction were determined. In its decision of July 10, 1935, the Council of People's Commissars said that the historic radial-circular plan should be retained and expanded; that industry within the city should be definitely limited to avoid concentration; that an ultimate maximum of 5,000,000 population should be provided for in the plans. (Present population, 3,600,000.)

- Upon this basis, a ten-year plan has been evolved. The incorporated area of the city has been expanded from 2,850,000 to 6,000,000 acres—mostly to the southwest, where the country is high and rolling. Beyond the city limits an immense circular belt of forest and park land is being developed. Using the existing plan, a completely integrated system of arterial highways—both radial and concentric—is being developed. Construction of all streets includes an underground system of utilities—gas, electricity, water, heat and sewerage—designed to accommodate the planned maximum population.

- Intimately connected with the development of the street pattern was that of parks and waterways. The boulevards which radiate in all directions from the city's heart are also parkways which, broadening as they approach the city limits, directly link the peripheral parks to the city proper. The margins of Moscow River and the numerous canals and lakes are also being developed as parkways upon which a great deal of the city's new housing will front.

- The housing problem played a very important part in the formation of the city plan. Although in the past 5 years some 20 million square feet of housing has been constructed, an enormous shortage—qualitative as well as quantitative—remains. Thus it is estimated that 165 million square feet of living space will be added to the city's housing accommodations in the next 10 years. This resulted in the conversion of many small residential blocks into large tracts suitable for large-scale housing developments. Provisions for schools, theaters, cinemas, shops, public and office buildings were planned not only on a city-wide, but also on a community basis.

- Aside from purely technical questions there was much ideological discussion as to what degree of mobility the urban population would develop. The finished transportation plans provide for perhaps the highest degree of mobility on the part of the population of any city in the world. The subway system, street cars, trolley busses and motor busses will ultimately form a complex system with the capacity of 4 billion rides per year.



Globe Photo

NEW HOME FOR TOMMY ATKINS

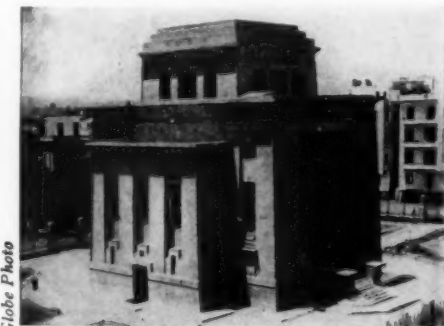
British soldiers pose with household goods as they move into modern flats built for them in London. Christened "Jubilee Buildings" for last year's celebration, this housing for "the married men in His Majesty's forces" includes all modern conveniences.

VEGLIANTE PRIZE GIVEN

Harry Lucht, Bergen County (N. J.) architect, was last month awarded the Vegliante Prize award of the Architects League of Northern New Jersey. The award, made possible by the late Anton L. Vegliante, is given annually to a League member "who distinguishes himself in his work during the preceding year."

"HOUSE BEAUTIFUL" AWARDS

The board of judges of the annual "House Beautiful" competition last month awarded Perry M. Duncan, New York architect, first prize of \$500 for the best 6-to-9-room house built east of the Mississippi. Second prize of \$300 went to Hunter McDonnell, New York. Both prize-winning houses were in the New York metropolitan area.



Globe Photo

NEW TOMB FOR RECENT PHARAOH

Soon to be dedicated by the Egyptians with holidays and celebrations is this Tomb for the Pasha Zaghoul. Showing traces of the traditional Egyptian style—battered walls, lotus ornament, etc.—the structure is located in the heart of modern Cairo.

"OLD IRONSIDES" IS AIR CONDITIONED NOW

As part of the precautions now being taken to preserve the gun deck and berth deck of the U. S. Frigate "Constitution," air conditioning has just been installed, to prevent the shrinking and checking of the timbers of those two decks. Many of the original timbers used in "Old Ironsides" deteriorated, thus necessitating their renewal. Search for the desired replacement wood of proper quality and seasoning required many years. (The yellow pine was originally obtained in South Carolina and Georgia; Massachusetts and Maine provided the white oak.) During the winter the gun and berth decks are heated for the comfort of the thousands of visitors to this oldest of U. S. Navy ships. Installation of a simple heating system would reduce the air's relative humidity and therefore tend to dry out excessively the timbers in this old ship and result in abnormal shrinkage and checkage.

The new system, operated for the first time on Armistice Day, will correct this condition.

CBS PLANS NEW HOLLYWOOD STATION

At an estimated cost of \$1,000,000 Columbia Broadcasting System will next year begin the erection of the country's most modern broadcasting center, in Hollywood, California. The new broadcasting center, which will occupy an entire block in the central district, will house the studios and offices of KNX, recently-acquired CBS outlet in Hollywood. Plans also provide additional studios, offices, and large auditoriums for Columbia's nation-wide and Pacific Coast network activities. An undetermined portion of the new premises will be given over to experimental television studios.

William Lescaze, designer of the interiors of three CBS Manhattan playhouses, is in charge of the "creative side" of the project. A novel use of new structural materials and a unique arrangement of space itself are promised. "Interior design will incorporate all that is new and tested in methods of program production, acoustical perfection, and engineering technique." Present schedules set October 1937 as the date for occupancy.

AMERICAN CLINIC FOR SWEDISH TEETH



Architect's Journal



New Eastman Dental Clinic for Children.

Before his death, George Eastman, of Kodak fame, gave \$1,000,000 to the city of Stockholm for a public dental clinic, stipulating only that it provide as nearly as possible the services offered by the Rochester (N. Y.) Dental Dispensary. The clinic, while handling all the more complicated cases of the school clinics, also includes a training hospital for dental nurses and post-graduate work for dental students. The Stockholm institution is similar to others founded by Eastman in London, Rome, Brussels and Paris.

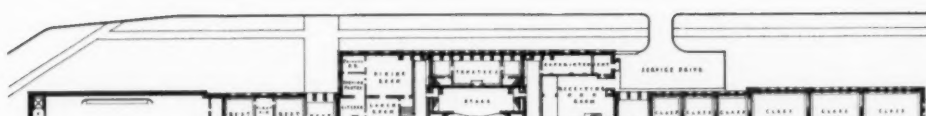
CALENDAR OF EXHIBITIONS AND EVENTS

- December 1-19—Exhibition of frescoes and mural designs by Virginia H. Wood, 730 Fifth Avenue, New York City.
- December 4—Eighteenth Annual Beaux-Arts Ball, Hotel Astor, New York City.
- December 4, 5—Annual Meeting, National Association Housing Officials, Philadelphia, Pa.
- December 15—"Plastics in Aviation" Exhibition, Metals and Plastics Bureau, International Building, Rockefeller Center, New York City.
- 1937
- January 18-20—First national Concrete Contractors Conference, Hotel Sherman, Chicago, Illinois.
- March 15-19—Exposition and Convention, National Oil Burner and Air Conditioning Association, Commercial Museum, Philadelphia, Pa.

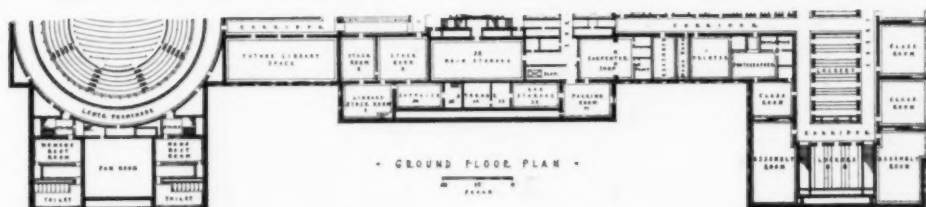


Photograph by M. Zimmerman

FLOATING RAILWAY



MUSEUM PLANNING



by **PHILIP N. YOUTZ, A.I.A.**
 President of the American Federation of Arts

Although museum buildings in America represent the very generous investment of public and private funds, there are few, if any, of them which stand out as models of efficient architectural planning. Most museums are seriously handicapped in the conduct of their program by the architecture of the building which houses them, in spite of the fact that money has not been stinted in the design and erection of the building.

The responsibility for the lack of functional design in the museum field must be shared by museum staff, architects, and trustees alike. Too often the architect sees a museum commission as an opportunity to erect an elaborate but useless monument. Museum directors and their staffs have not taken time in many cases to formulate carefully the needs of their institutions, or if they have formulated them they have overstressed immediate needs and not thought of the growing needs of the future. Frequently, boards of trustees have erected their

museums before engaging a director and staff so that they have had little or no professional advice on the character of the building.

If these three groups could be brought together—the trustees, the architect, and the museum staff—and given the opportunity of thoroughly analyzing the needs of a modern museum, we should probably see a new type of museum design unlike any that has been tried in this country or, indeed, in Europe. Perhaps architects are in the best position to lead the way toward this goal by insisting upon an exhaustive preliminary study of their problem in conference with the trustees of the future institution and members of the museum field.

In the course of many years of conference with trustees of museums throughout the country, with colleagues in the museum field and colleagues in the architectural field, the writer has gradually developed certain principles and standards of requirement which seem to apply to most institutions. This

MUSEUM PLANNING

CHARLES E. WILBOUR LIBRARY, BROOKLYN MUSEUM WILLIAM LESCAZE, ARCHITECT



paper attempts to summarize these very briefly with full acknowledgment that the best of these suggestions have been made by others.

1. A museum should be located as near the center of the population which it serves as possible. While it is not necessary to place a museum on the most expensive business property, it should be adjacent to the municipal center or located on a main arterial highway where it will be passed and seen by a maximum number of people. Particularly important is it that the site shall be served by adequate means of transportation.

2. Since a museum building is usually monumental in character its location should be studied in connection with the city plan, so that it will become a civic asset. This is particularly appropriate because a museum is open to all of the public. The prestige of a city is greatly increased by a well-planned municipal center including the city hall, courthouse, library, public auditorium, and museum.

3. There is no one "best" style for museums, but the style should be such that it does not hamper the active functions of the building. Style is a matter that can well be left to the architect to determine because he is the most competent student of architectural design.

4. A museum should have one main entrance and this should be at ground level and of sufficient size to accommodate safely the maximum occupancy of the museum building. Monumental flights of steps are not only physical and psychological barriers which the museum visitor must overcome, but they are extremely dangerous in case of wind, rain, ice, and snow, or in case of a sudden panic where several hundred visitors attempt to leave the building all at the same time.

It is impractical for a museum to have more than one entrance. Several entrances greatly complicate the guarding of the collections, make it difficult to guide and direct the public through the galleries, and require duplication of checkrooms, information desks, stairs, elevators, and directories.

5. In planning a museum, as in planning any other important building, the main rooms should be lo-



CARD INDEX FILES, READING ROOM OF THE CHARLES E. WILBOUR LIBRARY, BROOKLYN MUSEUM. The library, much used by students, was the first part of the museum plan to be modernized.

cated next to the entrance and on the ground floor. The public can thus enter them with a minimum of walking and effort. Less important rooms may be placed on upper floors.

The old idea that the main galleries of museums should be on an upper floor so as to receive top light is no longer valid. The lighting engineers have developed such excellent methods of artificial lighting at moderate cost, and the architect has devised such reliable natural light for lower floors by the use of continuous clerestory light admitted through diffusing glass, that it is no longer necessary to do violence to the plan and make the most important rooms the most remote.

6. In planning the museum the architect should devote primary attention to the problem of circulation. The visitor should be led into the museum and through it naturally and easily without feeling that he is in a maze and without being interrupted by architectural features. There should be continuous controlled circulation, at least through each main division of the museum, so that the director and his staff may arrange the material in each of these divisions to be seen in an orderly and intelligent sequence.

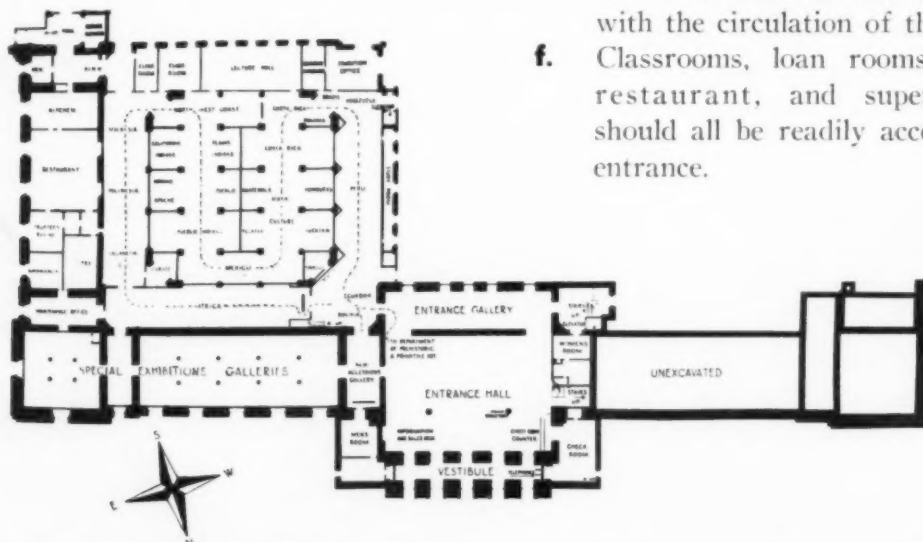
In a small museum it is well to have all the galleries arranged in a continuous sequence so that the

MUSEUM PLANNING



MINT MUSEUM, CHARLOTTE, N. C. The old mint at Charlotte was demolished and reconstructed on a new site as a Mint Art Center and Museum. The plan has admirable circulation. Visitors naturally turn to the right and are led consecutively through all the galleries and back to the entrance hall. The plan might be improved if all doors but the central one were eliminated at the entrance hall so that the wall in front of the visitor as he enters may be used for the exhibition of objects.

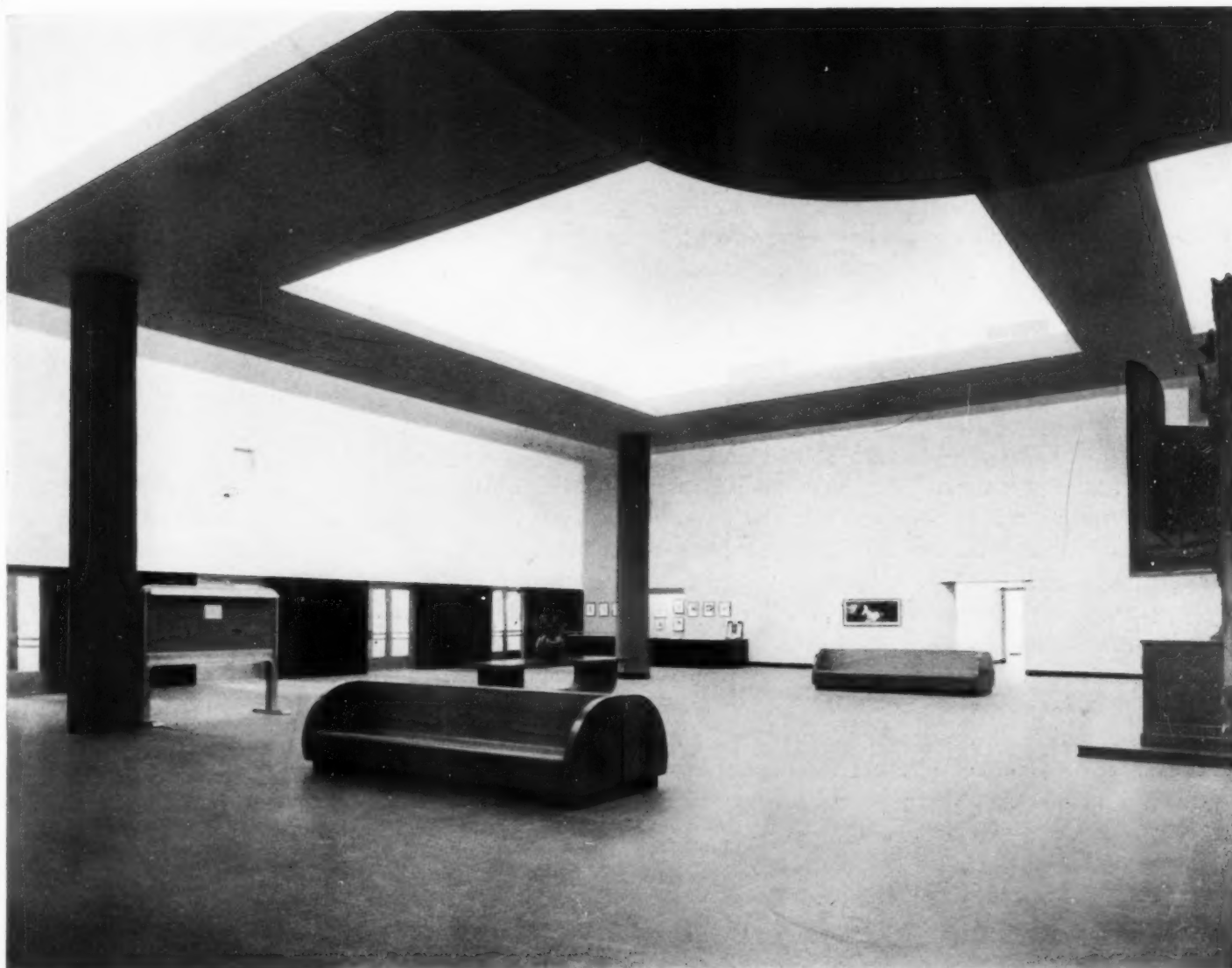
museum visitor is unconsciously led from one to the other in a predetermined and natural order. The museum staff is thus able to present collections in an effective, educational manner. In a large museum with many cultural divisions this controlled circulation can best be applied to the different main divisions, for few visitors will want to see more than one department at a time.



PLAN OF MAIN FLOOR (REMODELED), BROOKLYN MUSEUM. The plan shows such features as the use of a blank wall immediately in front of the visitor as he enters and where objects of art may be displayed. A series of special exhibition halls adjoins the entrance hall which may be closed off during re-installation without interfering with the main circulation. There is a concentration of "most used rooms," such as education, loan office, classrooms, restaurants, superintendent's office, on the first floor.

7. The functions of the museum can be conveniently divided into several groups:

- a. The permanent collections which in a large institution may be divided into a number of main divisions; these should occupy the main floors of the museum.
- b. The museum offices and preparation rooms. These may advantageously be located on an upper floor or in a remote wing for they are used by few visitors.
- c. The maintenance rooms, such as the receiving room, loan storage room, carpenter shop, machine shop, printing shop, modelers' studio, locker rooms, etc. These can to advantage be put in a light basement or in a remote wing.
- d. The storerooms. Each department of the museum should have a separate fireproof, dustproof, damp proof, air conditioned storeroom. These can be located in a dry basement or in a remote wing; they do not require outside light; they should be accessible to the receiving room and a service elevator connecting with all floors of the museum.
- e. Special exhibition gallery for temporary exhibitions. This should be located adjacent to the entrance on the main floor and should be so planned that it may be shut off during installation without interfering in any way with the circulation of the building.
- f. Classrooms, loan rooms, education office, restaurant, and superintendent's office, should all be readily accessible to the main entrance.



ENTRANCE HALL, BROOKLYN MUSEUM

8. The entrance hall of the museum serves the functions of orienting the public, of providing space for large groups, and gives the visitor his first impression of the institution. Therefore, the entrance hall should give direct access to the main galleries on the first floor, to the elevators and stairs communicating with the galleries on the upper floors, to the special exhibition gallery for temporary exhibitions, to the checkroom, toilets for both men and women, telephones, directory, and information desk.

In order to serve as a meeting place for large groups, the entrance hall must be of fairly generous size. Any one who has watched the operation of a museum will notice how crowded the entrance

becomes when school or club groups of from forty to four hundred persons arrive at the same time.

In order to give the visitor an adequate first impression it is well to leave the wall immediately facing him as he enters entirely unobstructed by doors or stairs. It can then be used as a kind of stage on which notable objects may be installed which will be arresting to the visitor and give him an impression of the character of the institution as a whole. Doors can conveniently be placed in the corners of the hall, thus protecting the axis for objects.

9. Museum stairs should be centrally located in a fireproof stair tower adjacent to the entrance hall.

MUSEUM PLANNING

by PHILIP N. YOUTZ, A.I.A.

They should be purely functional in character. Monumental stairs are bad for they are dangerous to the users, they occupy valuable space, they are expensive, and they usurp the attention of the visitor which should be directed to the collections.

10. Museum elevators should be of generous dimensions so as to accommodate large groups. It is most convenient to take an entire class in one trip or, at least, in two. Slow-speed elevators are satisfactory in museums because they rarely have to serve more than five or six floors.

11. The interior of a museum should be devoid of architectural ornament or should have a minimum of architectural ornamentation. The function of the architectural interior of the museum is to serve as a background for objects, and any form of ornament is sure to detract from the visitor's attention and make it difficult to display the objects effectively. In the case of an art museum, any pronounced interior style is likely to be incongruously out of harmony with the major portion of the material shown. The architect must content himself with fine proportional surfaces and repress all desire to adorn the interior.

12. Such architectural features as rotundas, colonnades, monumental stairs, grand courts of honor, are the excess baggage of the Victorian era and have no place in a contemporary regime. They bewilder the visitor, compete with the collections for interest, are inappropriate backgrounds for installations, are extremely costly and interfere with circulation. The prestige of the museum rests on the quality and organization and installation of its collections, not on pretentious architectural features.

13. The main axes in every room in a museum should be reserved for the display of objects. Doors and service panels should be moved to the corners of the room. Walls should have no obstructions and a minimum number of breaks so as to facilitate the installation of objects.

14. The most convenient proportion for galleries is a comparatively narrow room of twenty to twenty-

five feet in width with a considerably greater length. Large square galleries and courts are difficult to install and are unintelligible to a visitor for he finds their multiplicity of objects confusing and is unable to follow any definite line of circulation.

15. All museum galleries should have one or more invisible metal moldings so that objects can be installed without marring the walls.

16. The most inexpensive wall treatment is hard plaster finish with colored pastel tones in oil or casein paint.

17. In decorating a museum the ceiling should be kept white for diffusing and reflecting lights, the walls light pastel tones so as to show off objects to advantage, and the floors slate gray so as to prevent reflection which is fatiguing to the eyes. Slate gray is better for floors than any other color for it harmonizes with any type of installation scheme. Dark floors give a gallery repose and make a suitable base for installing objects.

18. All artificial lighting in a museum should be indirect so as to protect the visitor's eyes and prevent reflection in the glass of the exhibition cases.

19. There should be no built-in installation for such built-in features destroy the flexibility of a living museum. Where everything is movable in a museum it is possible to keep it up to date.

20. The museum should be, as far as possible, air conditioned. As the walls must be kept free for installation the best way to install air conditioning is to have an exhaust grille, perhaps two inches wide, just above the baseboard and a supply grille in or near the ceiling. These can be arranged as continuous bands so that they will be practically invisible. The supply grille should always be on or near the ceiling so as to avoid damaging objects.

21. The average museum floor should be designed to carry a load of at least a hundred and fifty pounds per square foot although many special museums will require a floor load considerably heavier than this.

EXHIBITION BUILDINGS



Photograph by Werner Mantz

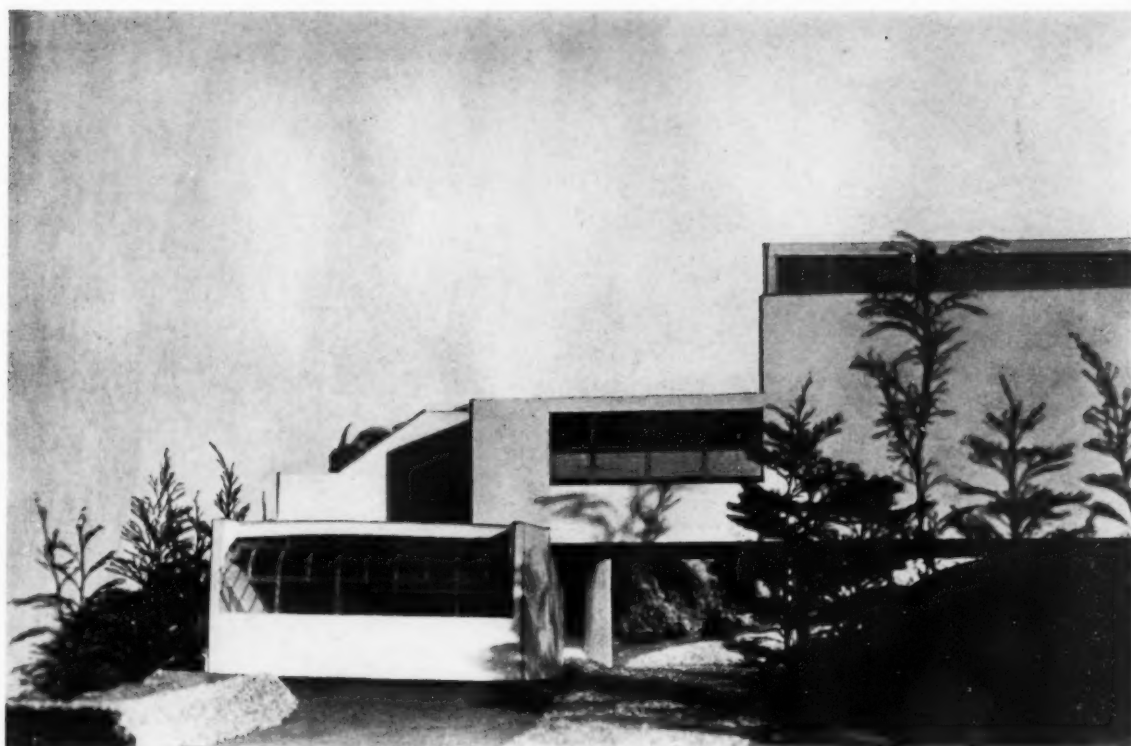
EXHIBITION BUILDING FOR A NEWSPAPER,
Cologne, Germany. Hans Schumacher, Architect.

EXHIBITION

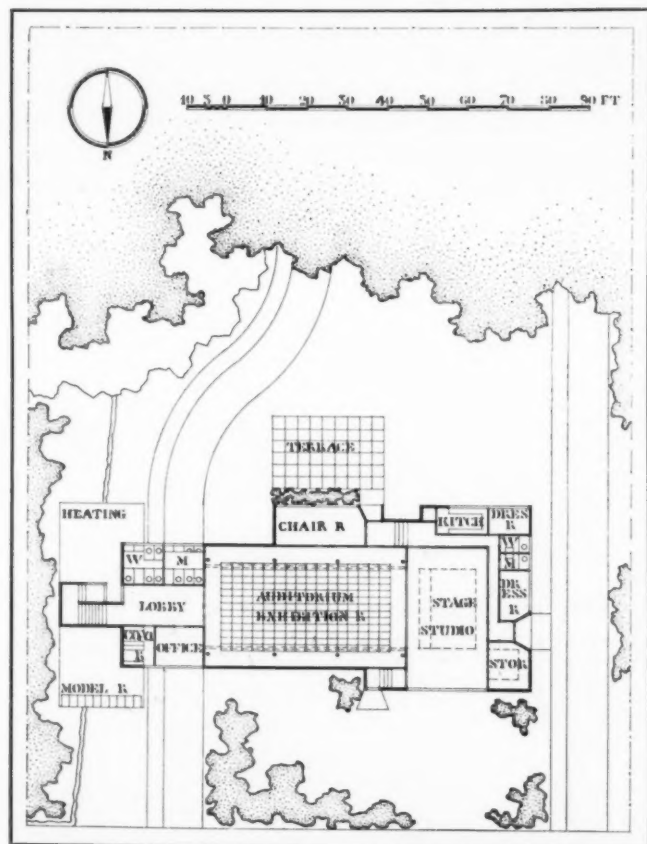


Photograph by Werner Mantz

EXHIBITION ALCOVES lighted from side gallery,
facing on garden background. Hans Schumacher,
Architect.



A COMMUNITY EXHIBITION BUILDING PROPOSED FOR DARIEN, CONNECTICUT. By A. LAWRENCE KOCHER and ALBERT FREY.



An art club with interests in painting, sculpture, music and drama required a permanent building with provisions for an exhibition hall and auditorium combined. Studios and other rooms were required.

SITE: The ground slopes abruptly to an upper level, fifteen feet above the highway. An old roadbed near the eastern end of the plot is about eight feet lower than the plateau level chosen for the building site. There are several large trees scattered toward the front. The natural difference in level made excavation unnecessary and permitted entrance to the building by a passageway. Each room has windows suited to required light.

PLAN: The rooms shown are at the upper level. The exhibition hall and auditorium are combined. The large stage serves dramatics and is intended as an art studio. The terrace faces a wood to the south, forming an attractive space for outdoor exhibits.

EXHIBITION



Photos Berliner Bild-Bericht

EXHIBIT IN A CONFERENCE ROOM FOR A
CORPORATION. WALTER GROPIUS, ARCHITECT.



EXHIBITION ROOM, PARIS.

WALTER GROPIUS, ARCHITECT.

Stairway designed by Walter Gropius; chairs
on the left designed by Marcel Breuer; chair
on right designed by Mies van der Rohe.

EXHIBITION



Photo Crimella-Milano

Photo Das Werk



ABOVE: Gallery of Architecture, Milan Exhibition, Triennale, 1936. Agnoldomenico Pica, Architect. Satisfactory lighting from side. Models viewed from all angles.

LEFT: Display of architectural drawings and photographs, also community planning. A. Branchetti, A. Pasquali, Cesare Pea, Architects.

RIGHT: Exhibition Hall, Triennale, Milan; Swiss section by Max Bill. Showcase in foreground is violet in color; dots on back wall are blue-gray; sculptural forms are by Max Bill, Zurich.

Photo Das Werk



EXHIBITION

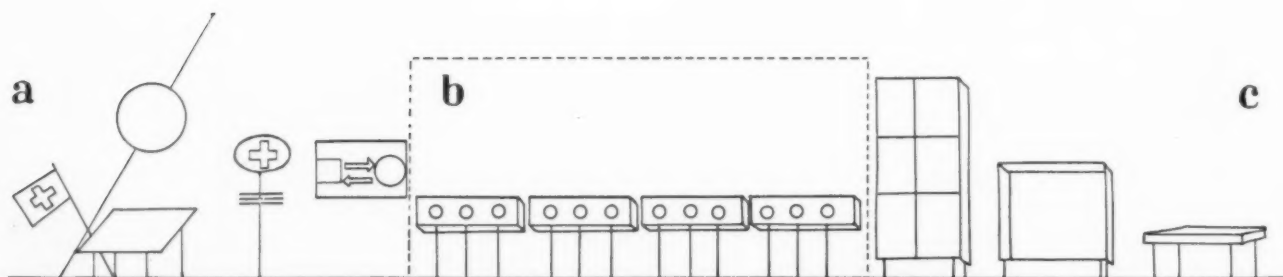
Photos Das Werk

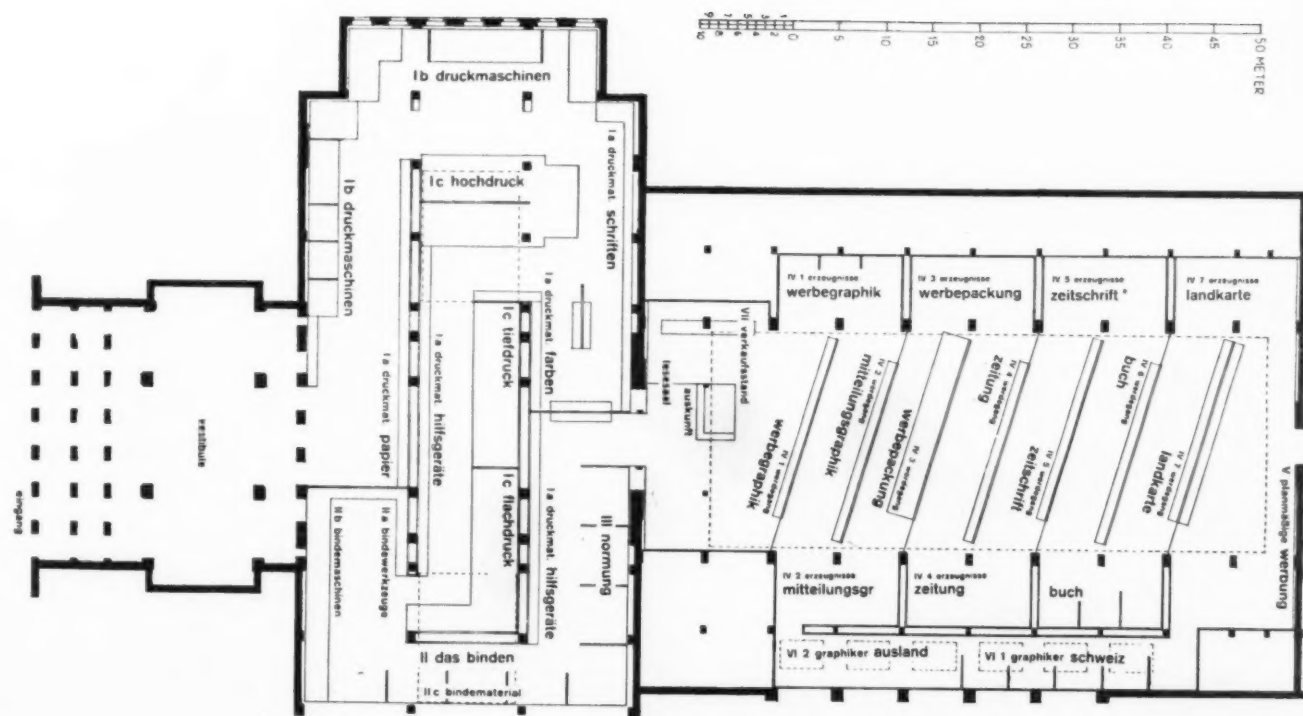
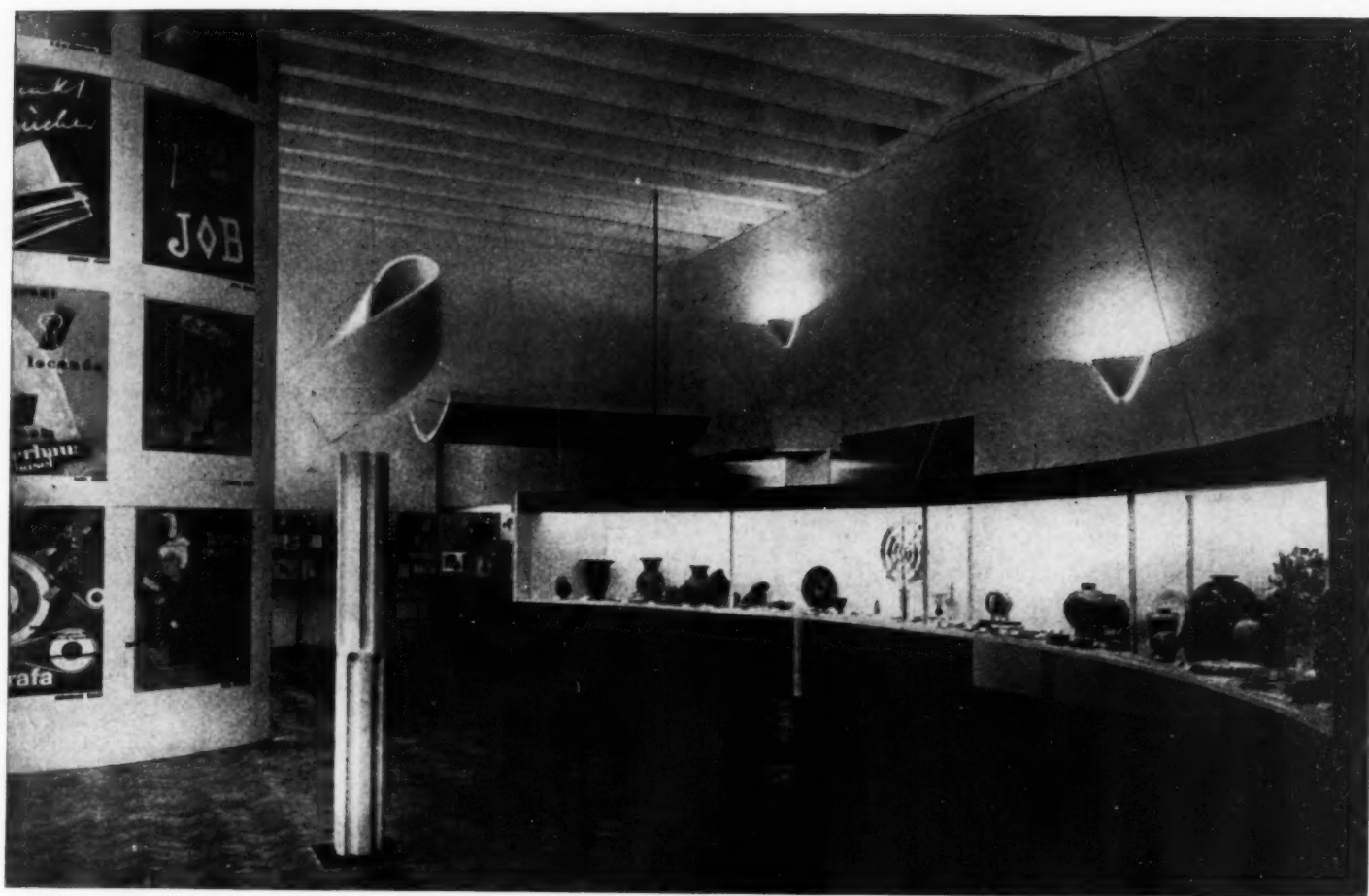


ABOVE: Entrance to a hall for display, Triennale, Milan, 1936. Designed by Max Bill.

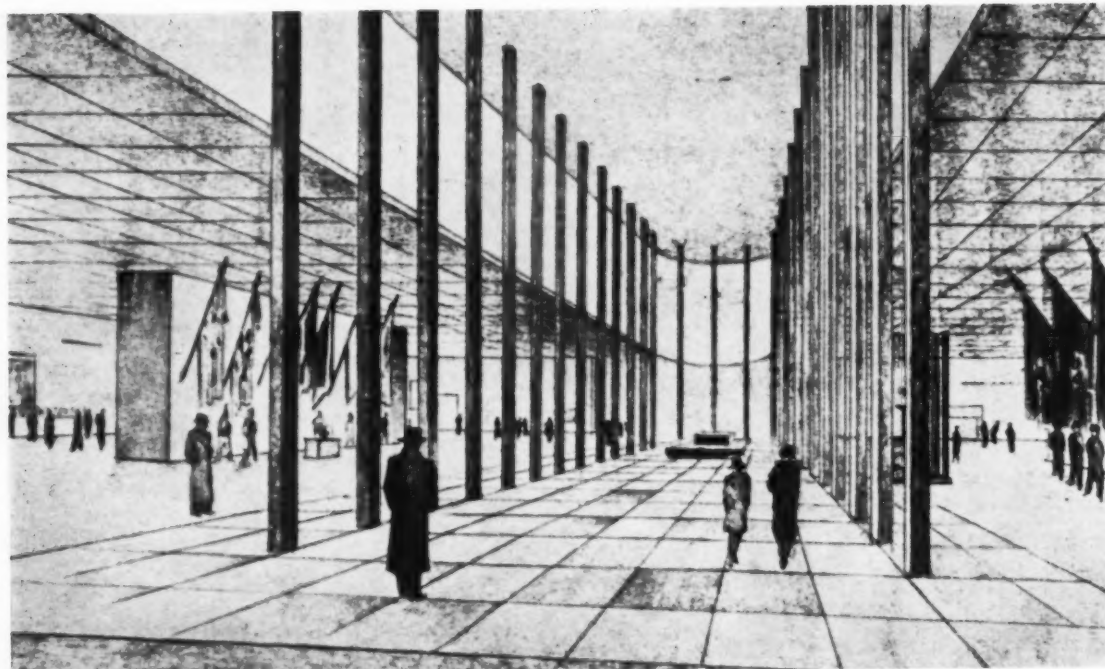
BELOW: Standard exhibit cases: (a) Nationality symbolized by globe and flag. The display relates to overseas export. (b) Production display. The factories, as colored photographs, have a plastic effect through lenses in the viewing boxes. The lighted holes attract visitors. The picture is designated at the front of the box. (c) Phototower used to show products which are not easily exhibited, such as turbines, locomotives, mechanical looms, etc. Smaller cases are used for display of smaller objects.

OPPOSITE PAGE. UPPER: Exhibition room for the display of crafts. The background is clear white, lighted from top of case. Exhibits at back, center, are mounted on a black background. Posters at left are applied to a yellow background. LOWER: Plan of exhibition rooms for graphic arts "Grafa International Exhibit, Basel, 1936."

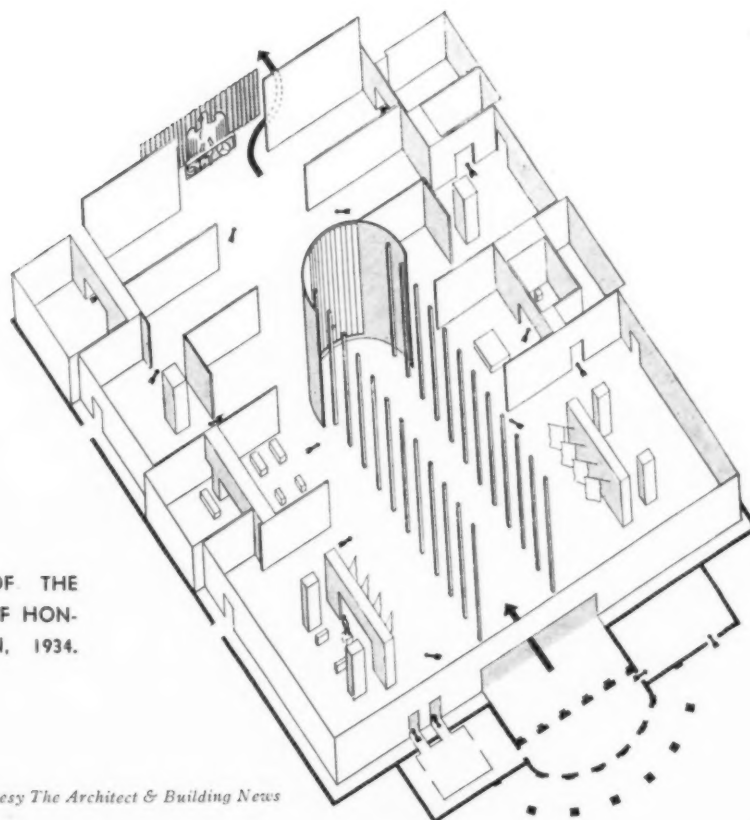




EXHIBITION BUILDINGS



THE HALL OF HONOR, BERLIN EXHIBITION, 1934



SECTIONAL LAYOUT OF THE
ENTRANCE AND HALL OF HON-
OR, BERLIN EXHIBITION, 1934.

Courtesy The Architect & Building News

PORTFOLIO

HOUSE OF S. M. SADI, NORTHPORT, LONG ISLAND.

DESIGNED BY S. M. SADI.

HOUSE FOR MISS HAGUE, PASADENA, CALIFORNIA.

VAN PELT AND LIND, ARCHITECTS.

HOUSE FOR H. J. ALLEY, BRENTWOOD HEIGHTS, LOS

ANGELES. RALPH C. FLEWELLING, ARCHITECT.

WWJ BROADCASTING STATION, DETROIT, MICHIGAN.

ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS

THE THIRD UNITARIAN CHURCH, CHICAGO, ILLINOIS.

DESIGNED BY PAUL SCHWEIKHER, INC.

SUFFOLK DOWNS RACE TRACK, BOSTON, MASSACHUSETTS.

MARK LINENTHAL, ENGINEER.

NEW DETROIT FEDERAL BUILDING, DETROIT, MICHIGAN.

ROBERT O. DERRICK, INC., ARCHITECTS

WORLD'S FAIR COMPETITION

FIRST MENTION, GEORGE LYMAN PAINE, JR.;

SECOND MENTION, PETER COPELAND; THIRD

MENTION, PETER COKE SMITH.

JACKSON COUNTY COURTHOUSE, KANSAS CITY,

MISSOURI. KEENE AND SIMPSON, WIGHT AND

WIGHT, AND FREDERICK G. GUNN, ARCHITECTS;

EDWARD F. NEILD, CONSULTING ARCHITECT.

CORINTH MUSEUM, CORINTH, GREECE. W. STUART

THOMPSON, ARCHITECT, OF THOMPSON AND

CHURCHILL.

CURRENT ARCHITECTURE

PRIVATE HOMES



Photographs by F. S. Lincoln



HOUSE FOR S. M. SADI
NORTHPORT, LONG ISLAND
DESIGNED BY S. M. SADI



FIRST FLOOR



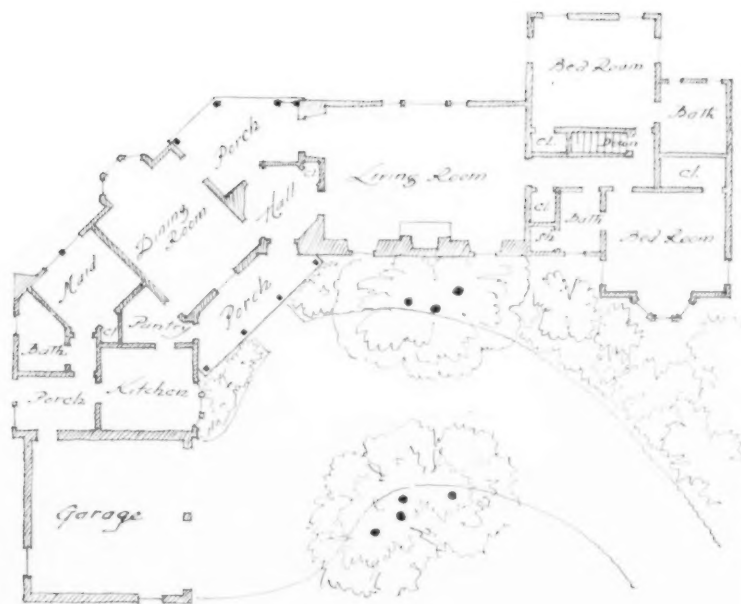
SECOND FLOOR

PRIVATE HOMES



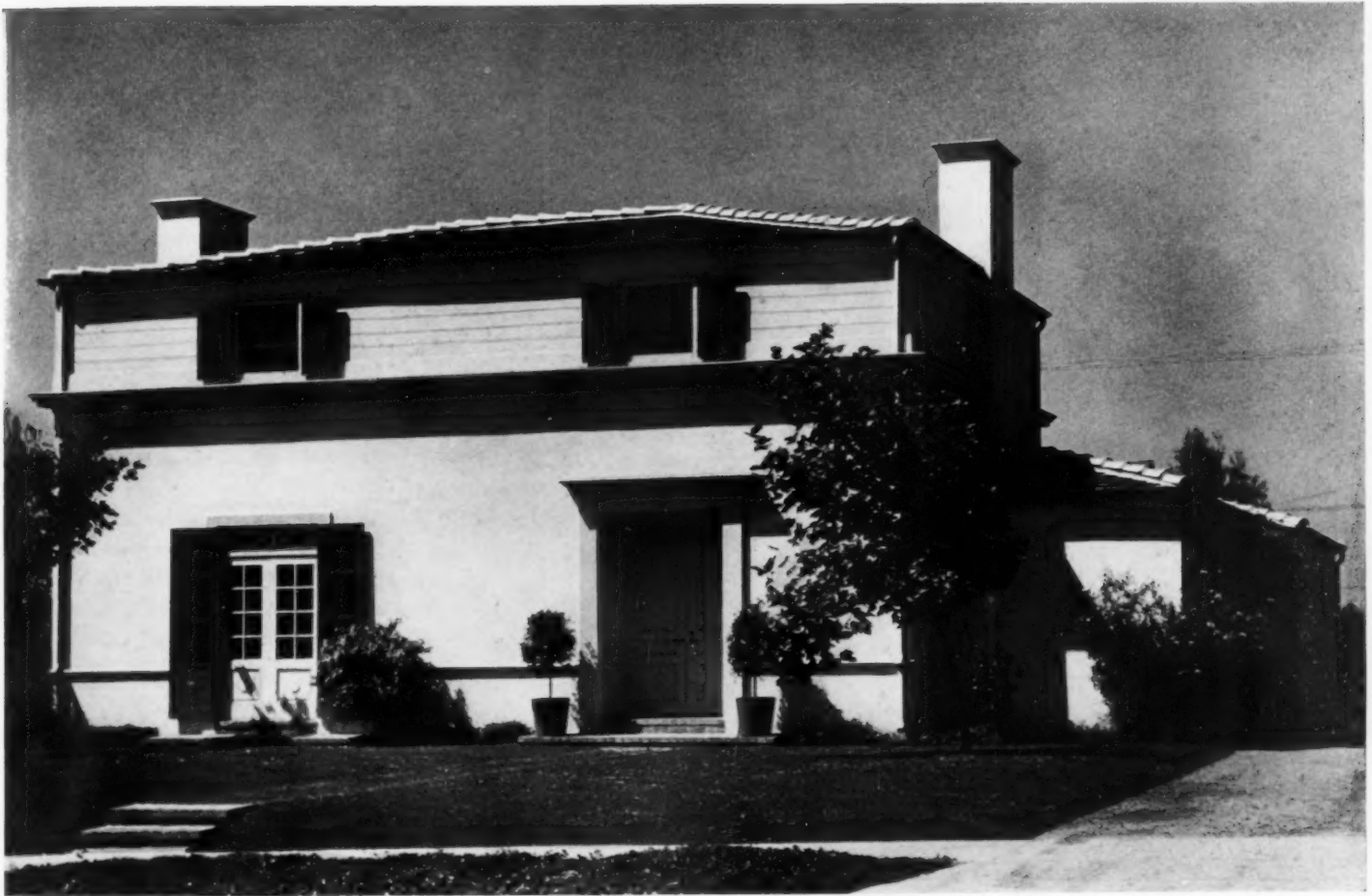
Photograph by George D. Haight

HOUSE FOR MISS HAGUE PASADENA, CALIFORNIA VAN PELT AND LIND, ARCHITECTS



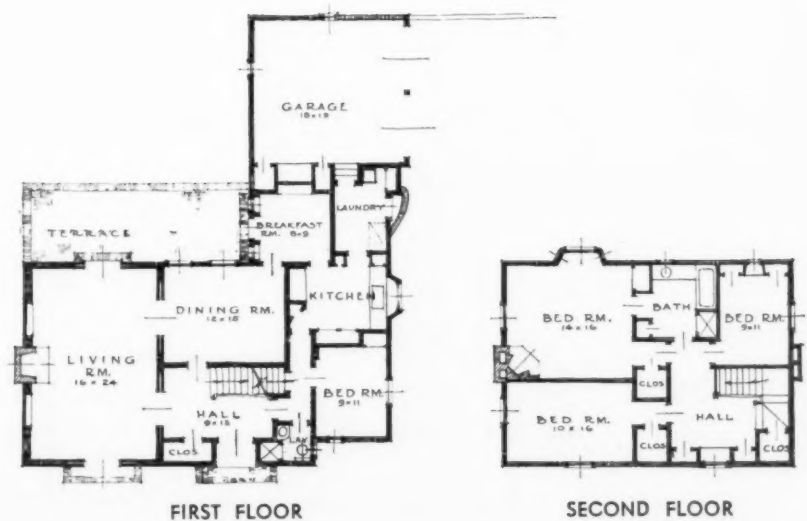
FLOOR PLAN

Designed to conform to the contours of the property, this frame-and-stucco house is planned so that all the major rooms command the view down the slope and across the valley below. The cost, including landscaping, is \$7,700.

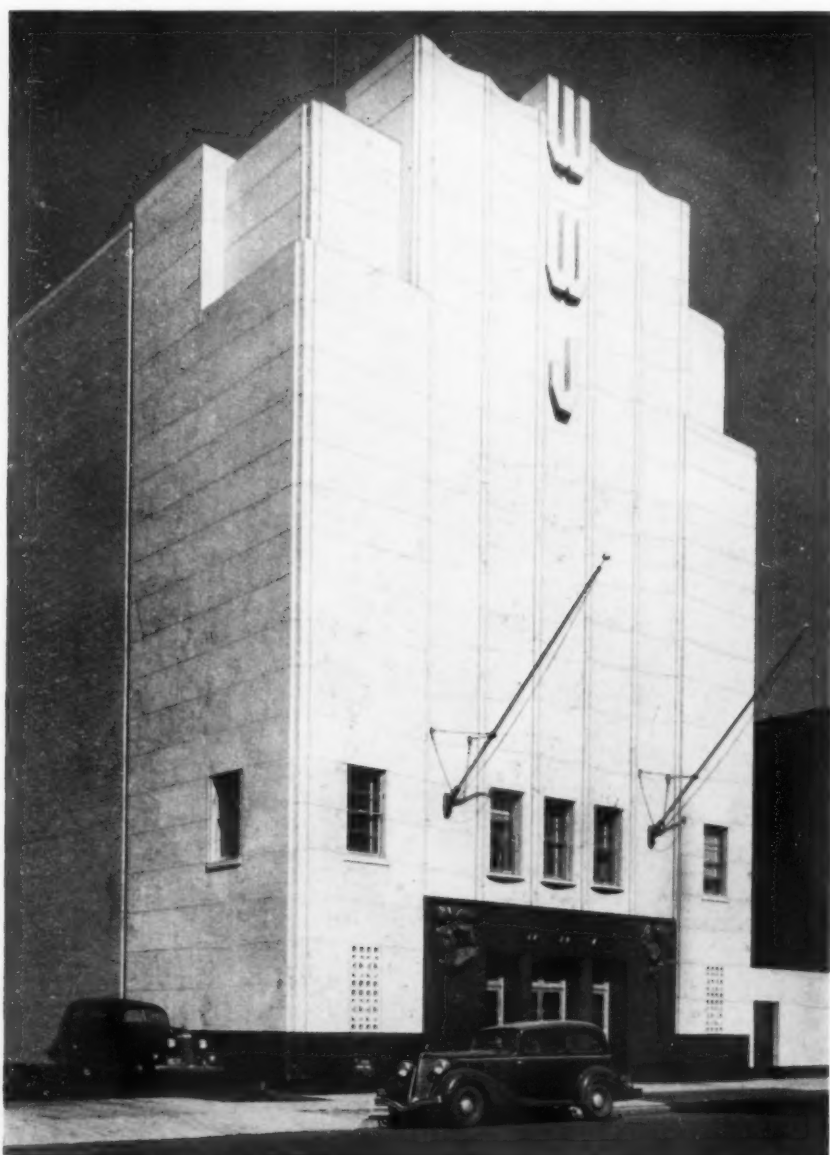


HOUSE FOR H. J. ALLEY
BRENTWOOD HEIGHTS, LOS ANGELES
RALPH C. FLEWELLING, ARCHITECT

A compact and relatively large house, built of frame, with exterior finish of plaster and wood siding. Built at a cost of \$6,500 in 1933.



RADIO STATION



Photographs by Robert W. Tebbs

WWJ BROADCASTING STATION DETROIT, MICHIGAN

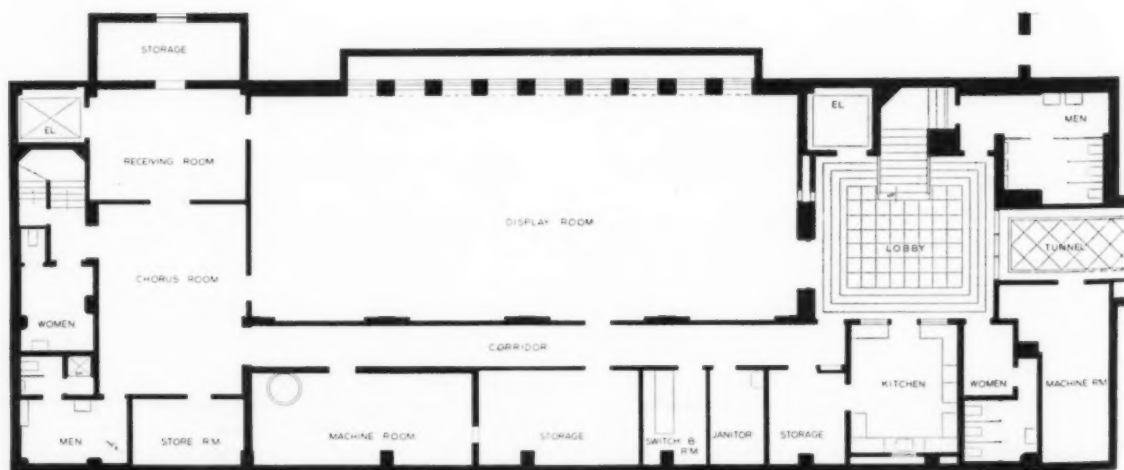
ALBERT KAHN, INC.,

ARCHITECTS and ENGINEERS

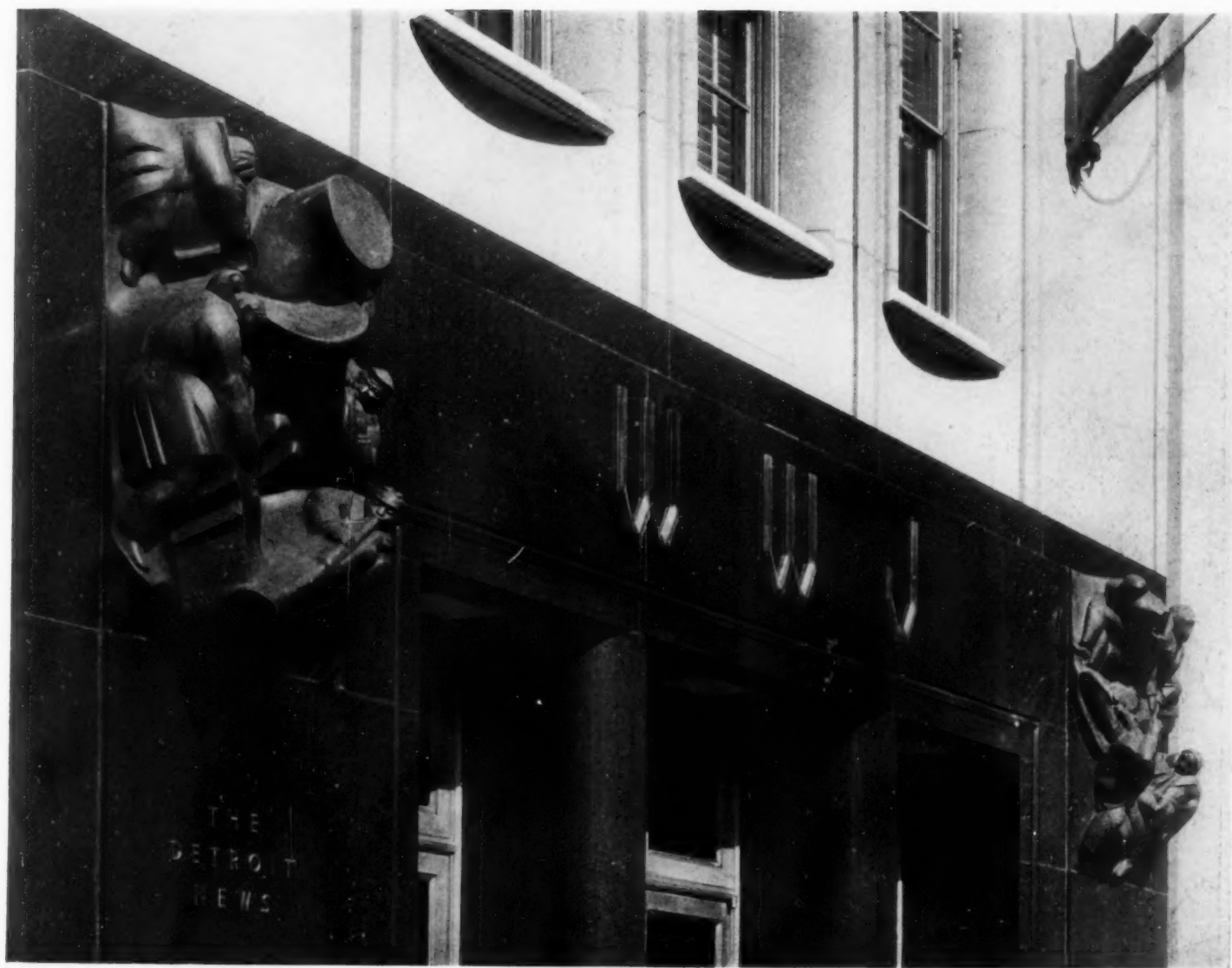
The construction is a combination of structural steel and reinforced concrete. The façade of the building is faced with Indiana limestone, the treatment around the main entrance being of black artificial granite. The two panels at the main entrance are carved in granite from models prepared by Carl Milles, sculptor. Exterior windows and doors are of aluminum. All studios are soundproofed and treated for proper acoustics by Johns-Manville, perforated Transite backed up with Rock Wool being used quite generally for walls and ceilings. For proper sound reverberation, parts of the walls are treated with Transite over solid plaster. The building is air conditioned and cooled throughout; heating is by steam. The interior of the building is done in a simple manner depending mainly upon color and outline. The floors are of linoleum.

On the ground floor there is a small auditorium seating approximately 350, with a fair-sized stage; on the second floor, two large studios which are two stories in height, and one smaller. On the third floor, there is still another studio in addition to what is called the Rehearsal Room which may be used as a studio. There is also a library, numerous offices on a mezzanine above the entrance lobby and others on both the second and third floors. The main control room is on the second floor, though each studio has its own separate control room. For the two large studios on the second floor there are observation galleries for visitors, also small private rooms from which clients may view the broadcasting. In the basement is placed a large exhibition room to be used by advertisers, also a modern kitchen for the Home Economy division.

B A S E M E N T

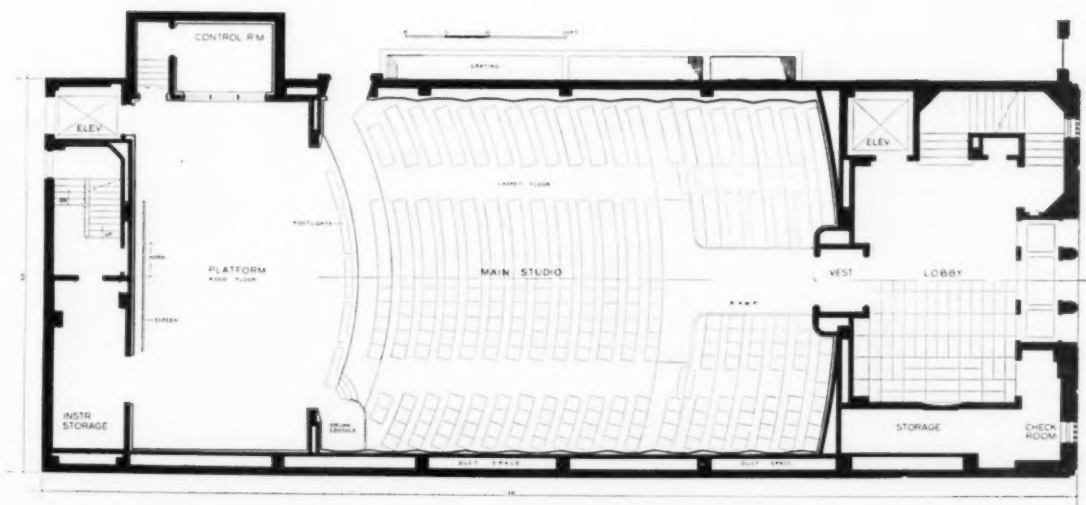


RADIO STATION

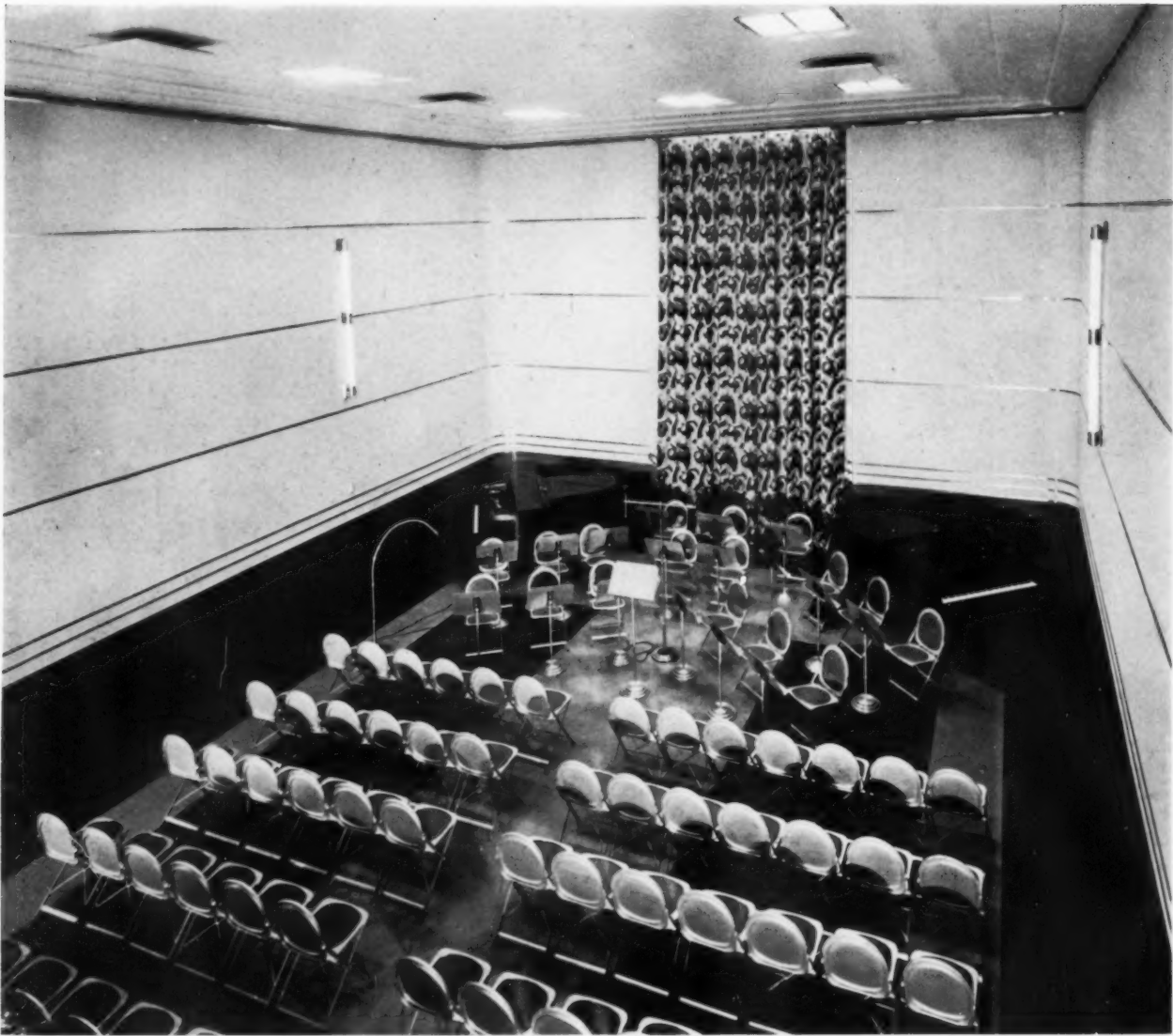


CARL MILLES, SCULPTOR

FIRST FLOOR

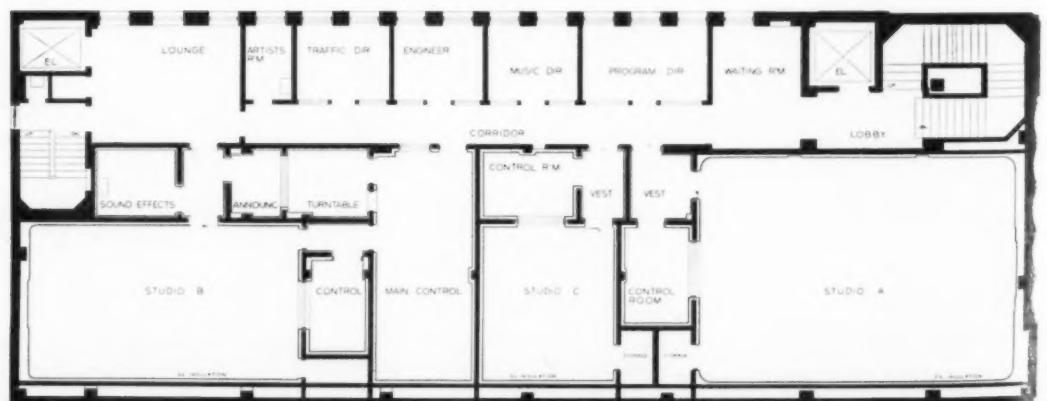


RADIO STATION



STUDIO A

WWJ BROADCASTING STATION DETROIT, MICHIGAN
ALBERT KAHN, INC., ARCHITECTS and ENGINEERS



SECOND FLOOR

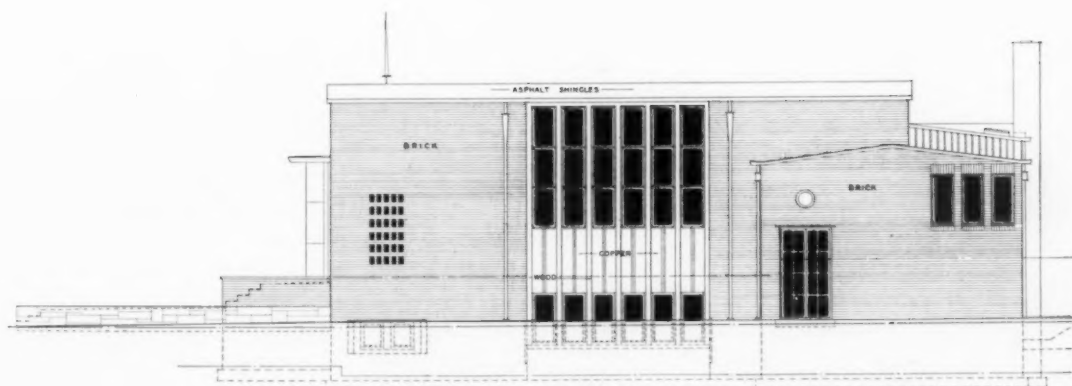


THE THIRD UNITARIAN CHURCH

CHICAGO, ILLINOIS

DESIGNED BY PAUL SCHWEIKHER, INC.

ELEVATION



CHURCH



THE THIRD UNITARIAN CHURCH

CHICAGO, ILLINOIS

DESIGNED BY PAUL SCHWEIKHER, INC.

GROUND FLOOR: Concrete floors, walls concrete to grade. Walls to roof are solid common brick (Illinois hard common of a buff to deeper browns color). The brick is also exposed on the interior. The ceiling and proscenium are of plywood. The organ chamber has been designed for the new Hammond pipeless electric organ. The ground floor is used for dinners and dances. The main auditorium window at present glazed with opal white glass is later to be replaced with stained glass. Roofs, gutters, and downspouts are of copper.

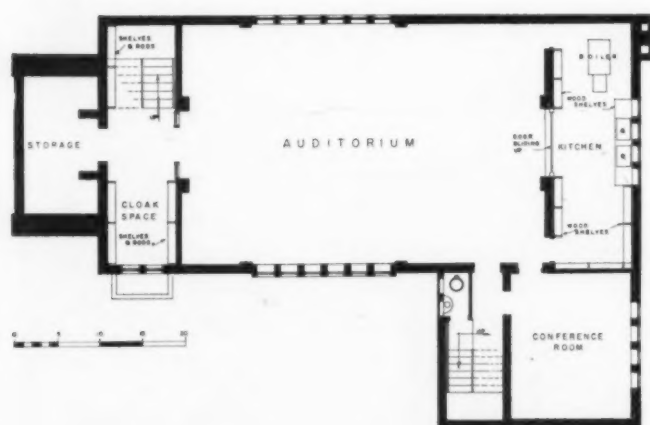


CHURCH

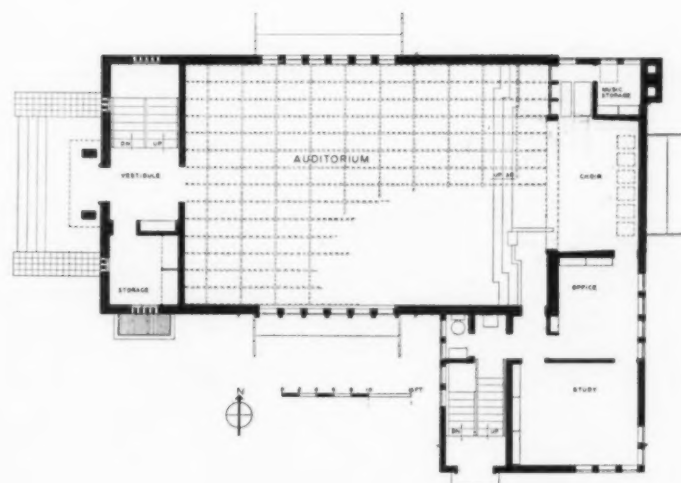


THE THIRD UNITARIAN CHURCH
CHICAGO, ILLINOIS

DESIGNED BY PAUL SCHWEIKHER, INC.



BASEMENT



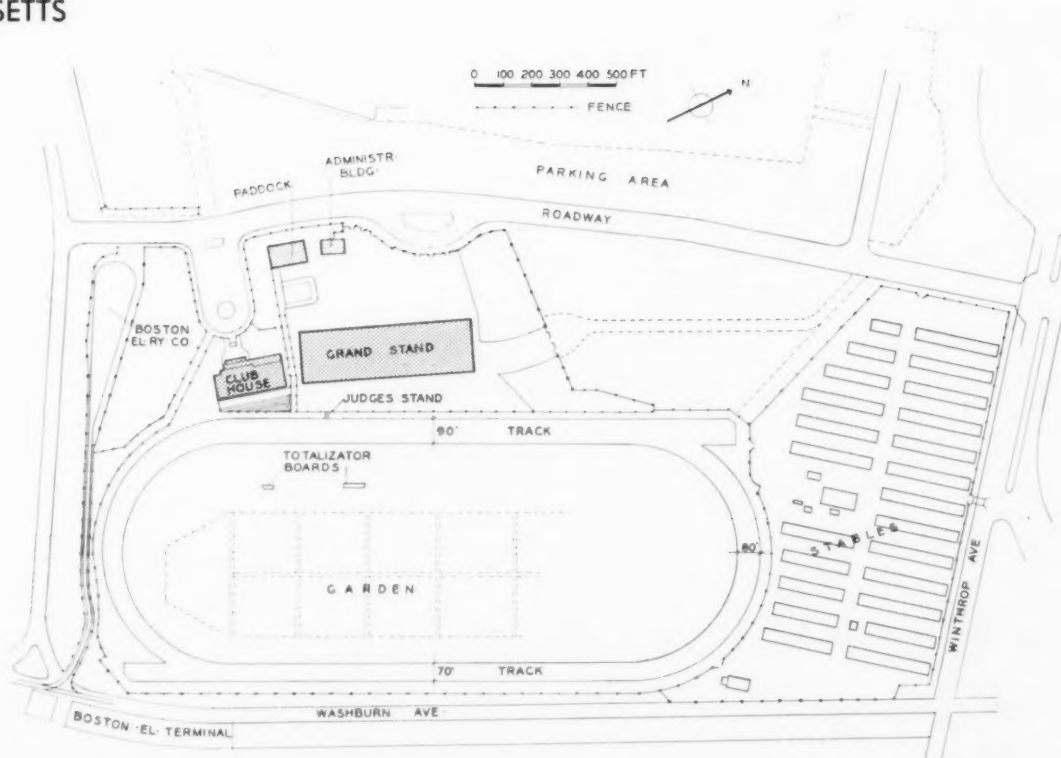
GROUND FLOOR

RACE TRACK

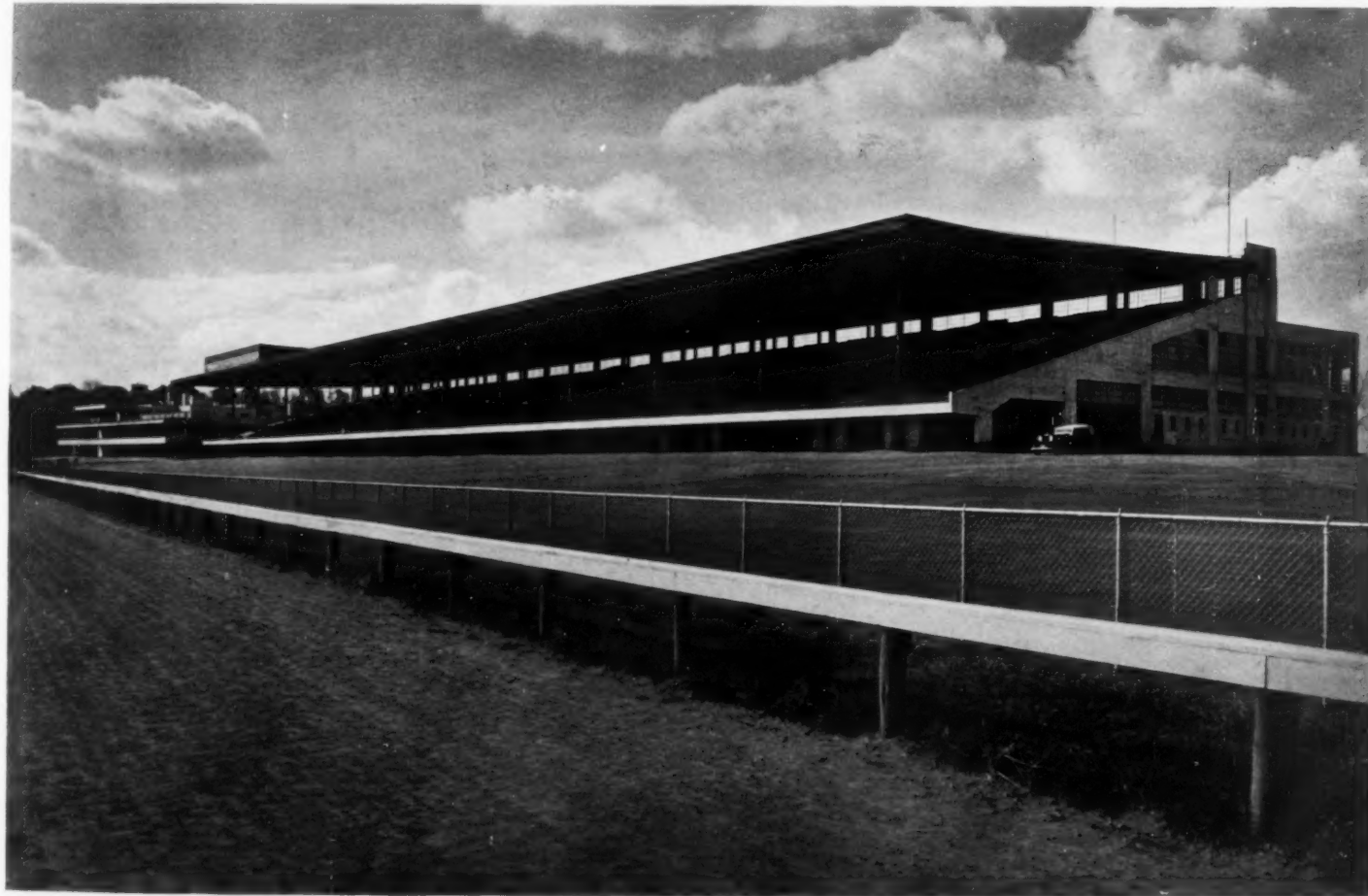
SUFFOLK DOWNS RACE TRACK

BOSTON, MASSACHUSETTS

MARK LINENTHAL,
ENGINEER



Photograph by F. S. Lincoln



RACE TRACK

CLUBHOUSE WITH SLOPED TERRACES IN FOREGROUND; GRANDSTAND BEYOND



Photographs by F. S. Lincoln

SUFFOLK DOWNS RACE TRACK

BOSTON, MASSACHUSETTS

MARK LINENTHAL, ENGINEER

The elements of race track planning are as complex as a modern industrial plant. The track requires elaborate provisions for receiving, seating, and servicing audiences of many thousands. There is also the need for housing and servicing horses. Provision must be made for grading, drainage, sanitary sewerage, water supply, lighting roads, paving, parking areas and lesser buildings of many kinds. Race tracks operate but a few weeks in a year. They must, however, be so designed as to operate at peak load during few hours and on few days of the year.

The problem of race track design consists of: (1) good vision from all angles; (2) handling of traffic. The problem of vision is to so arrange the grandstand, clubhouse and standing space in front of them that all spectators will have a clear and unobstructed view of the entire track. The factors involved are the slope of standing spaces, the pitch of the grandstand and of the clubhouse verandas, the angle which the grand-

stand and the clubhouse make to each other and to the line of the home stretch.

Mr. Mark Linenthal, writing in *Engineering News-Record*, says of sight lines that these are "best handled by the method of trial and error. A perfect solution, in the writer's opinion, is impossible because any practicable arrangement of clubhouse and grandstand will, of necessity, involve the obscuring of some part of the track from the upper corner of the grandstand on the end nearer the clubhouse. A good solution will minimize this defect. The accompanying plan will indicate a solution that has been tried out in practice and has demonstrated enough success to meet with the approval of race track managements.

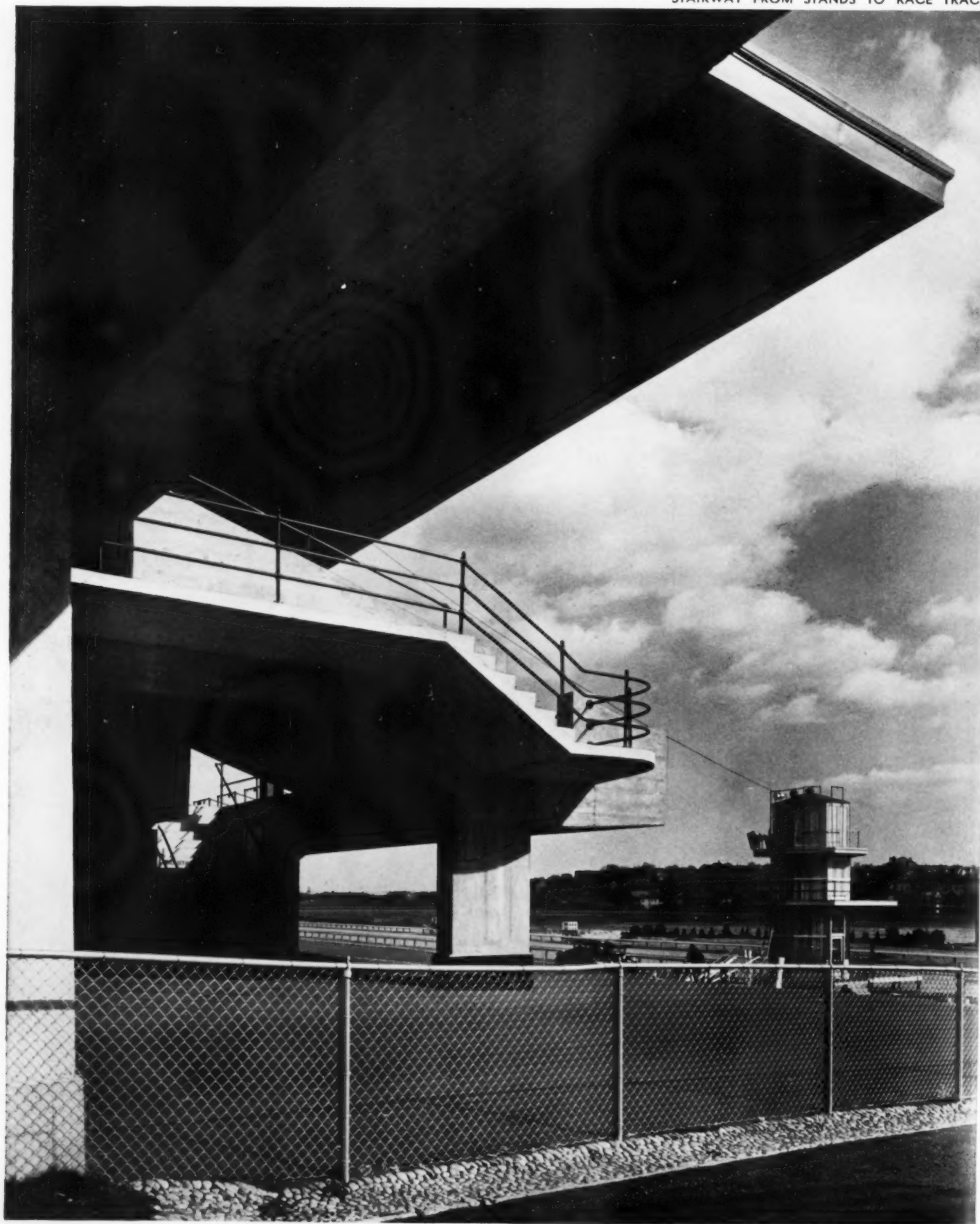
"The second great problem in planning is the handling of three kinds of traffic—pedestrian, automobile and horse. Incidentally, but of no less

DETAIL OF CLUBHOUSE TERRACES



RACE TRACK

STAIRWAY FROM STANDS TO RACE TRACK



STAIRWAY APPROACH AT NORTHWEST SIDE

*Photographs by F. S. Lincoln*

SUFFOLK DOWNS RACE TRACK

BOSTON, MASSACHUSETTS

MARK LINENTHAL, ENGINEER

importance, there is need for provision for railroads, street cars, busses, etc., which may be available for handling people and horses to and from the track. By far the largest proportion of spectators at the race tracks in these days come by automobile. Thousands, however, come by railroad and street car. The bus traffic, also, is large enough to merit consideration. The horses are transported to and from the track by railroad and by auto van.

"The writer is unable to offer any general rule for the solution of the problem presented by these traffic needs. Here again the method of trial and error on the drawing board seems to be the only practicable one. In making these trials there are a number of requirements which it is well to bear in mind. Most of the people who come to the race track go to the grandstand. Entering the plant, they come in more or less gradually, but they all want to leave at the same time. The thorough-

bred race horse is a highly nervous animal and as far as possible should be isolated from the crowd, except during the parade from the paddock to the course. The attendants need freedom from the crowd as well as do the horses. The jockeys should, as far as possible, be kept from contact with the public during the racing hours. Accidents may occur to spectators and jockeys. Objectionable persons must be quickly and quietly removed.

"To meet these requirements, it follows that the roads should be wide, parking spaces should be laid out generously, stations for trains and street cars and busses should be placed as close to the grandstand as conditions of the site permit. The stables should be located to permit the easy receipt of horses and supplies, easy access to the track and isolation from the public. The jockeys' quarters should be located as close as possible to the paddock where they mount the horses. There

RACE TRACK

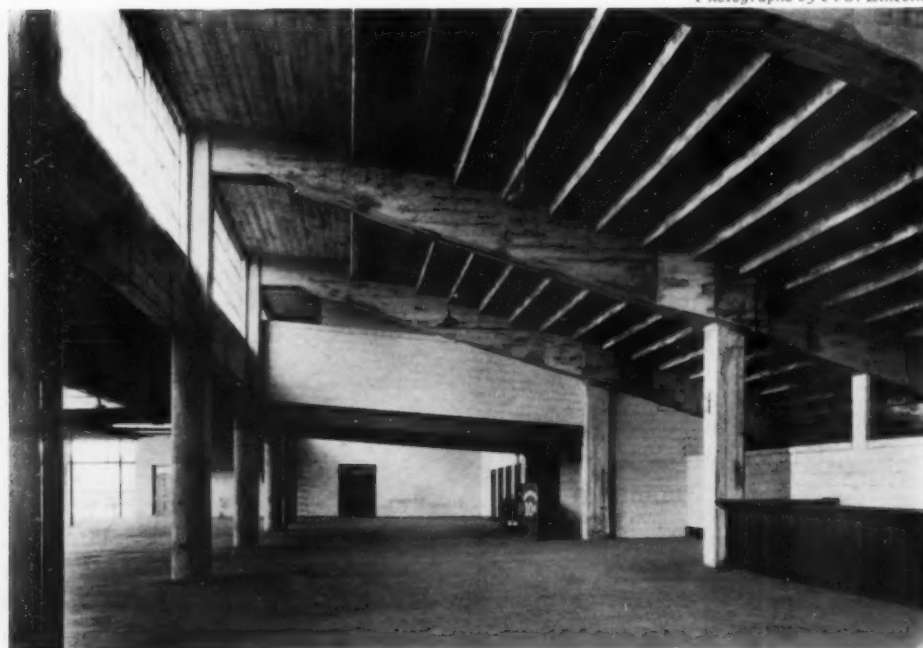


THE INTERIOR OF MAIN STAND is 800 by 185 feet and seats 11,000 persons.

SUFFOLK DOWNS RACE TRACK

BOSTON, MASSACHUSETTS

MARK LINENTHAL, ENGINEER



UNDER SIDE OF GRANDSTAND.

Photographs by F. S. Lincoln

must be easy and quick approach to the first aid room and the police station without too much publicity.

DESIGN OF BUILDINGS

"There are some rather unusual structural details in the grandstand. There is no diagonal bracing, and the transverse bents take the wind load as rigid frames. The combination of reinforced concrete and structural steel, with the concrete work well on its way before the arrival of the steel, involved provision for receiving column bases designed for large restraint, and details anchored into the exterior concrete columns to receive steel beams. Simplicity was the aim in these details.

"In the clubhouse an entirely different problem was presented. A race course clubhouse is essentially a large reviewing stand containing, in addition, lounges, restaurant, kitchens, toilet facilities, offices, etc. These auxiliary rooms are all highly finished and completely furnished and compare favorably with similar rooms in any modern clubhouse or hotel. Even a fully automatic electric passenger elevator with a cab and doors of the most modern design was included.

"With these considerations in mind it was decided at Suffolk Downs to use a bolted steel frame with rolled steel joists closely spaced, except on the roof where wood joists were used. The rough floors are $2\frac{1}{2}$ " concrete slabs and the roofs are wood boarded. In the rooms the slabs are covered with finished flooring; outdoors, they are exposed.

"The administration building is substantially a small office building and is finished as such a building ordinarily is, with plastered surfaces and wood trim. It was built with masonry bearing walls and steel beams supporting plank floors. In this way the shrinkage due to drying lumber was minimized and at the same time reasonable economy in construction was maintained.

"The paddock is a large open shed. It was built with masonry exterior piers and spandrels to match the other structures and with a heavy timber and plank roof.

"The stables are light wooden structures; this construction being chosen for the sake of economy. The other buildings in the stable area, such as the mess hall and equipment building, are all wood on spread footings carried to the original fill."

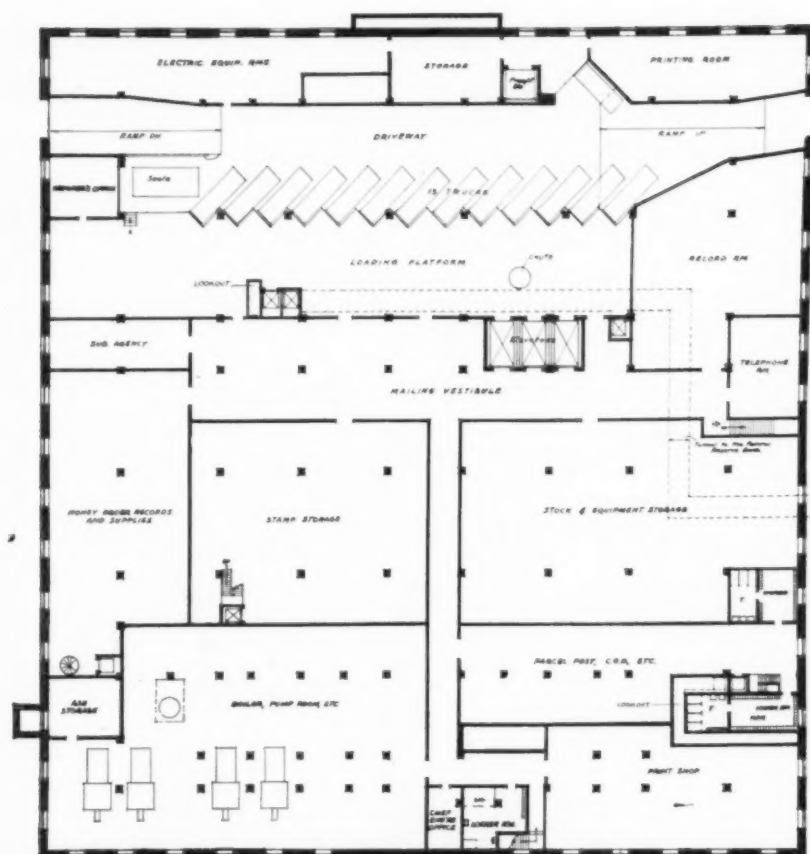
NEW DETROIT FEDERAL BUILDING
DETROIT, MICHIGAN

ROBERT O. DERRICK, INC., ARCHITECTS



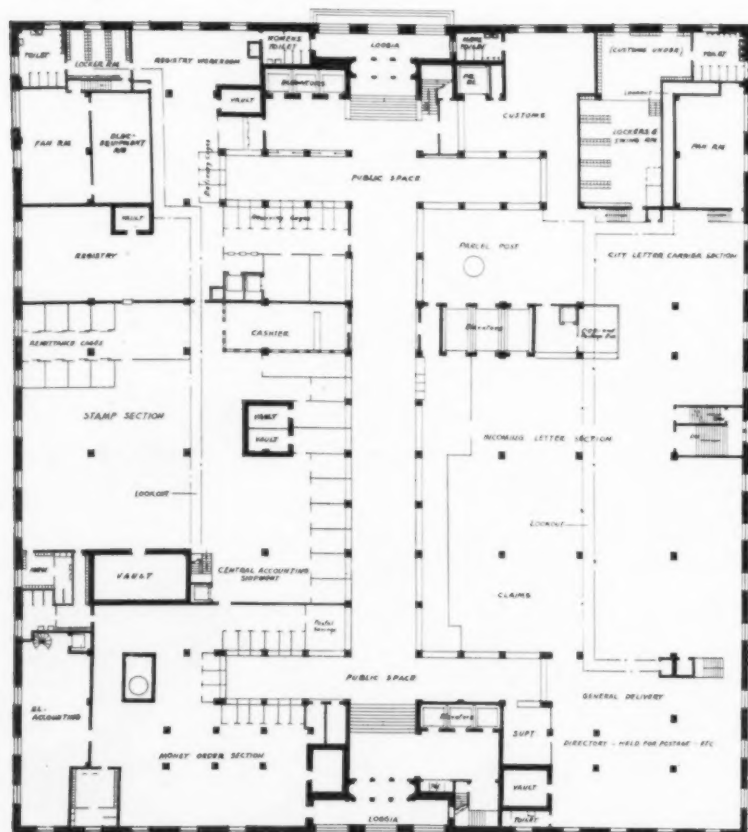
Photograph by Robert W. Tebbs

FEDERAL BUILDING



NEW DETROIT FEDERAL BUILDING
DETROIT, MICHIGAN
ROBERT O. DERRICK, INC., ARCHITECTS

BASEMENT

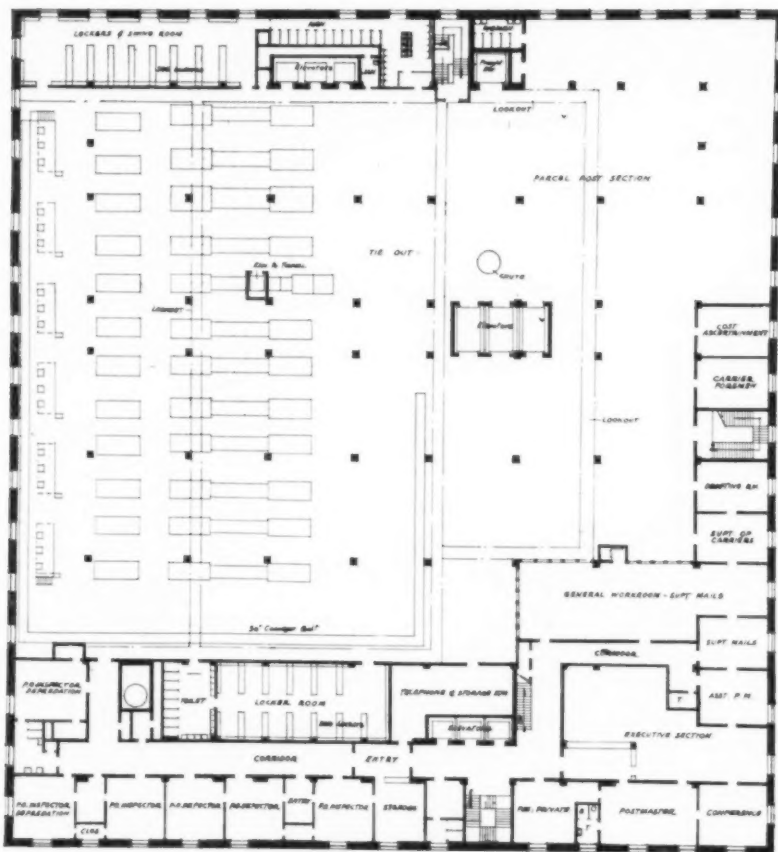


FIRST FLOOR



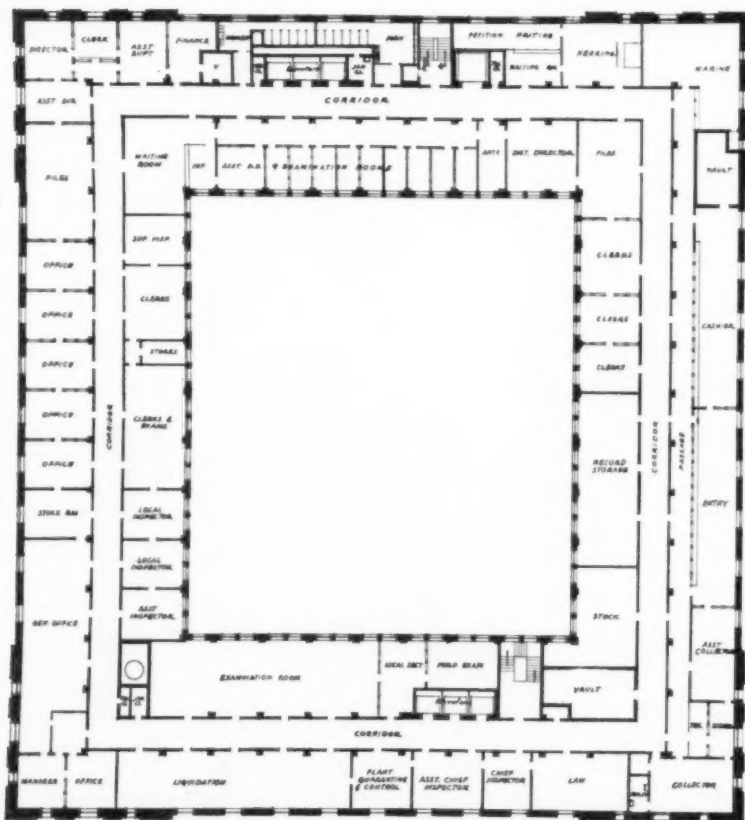
Photograph by Robert W. Tebbs

FEDERAL BUILDING

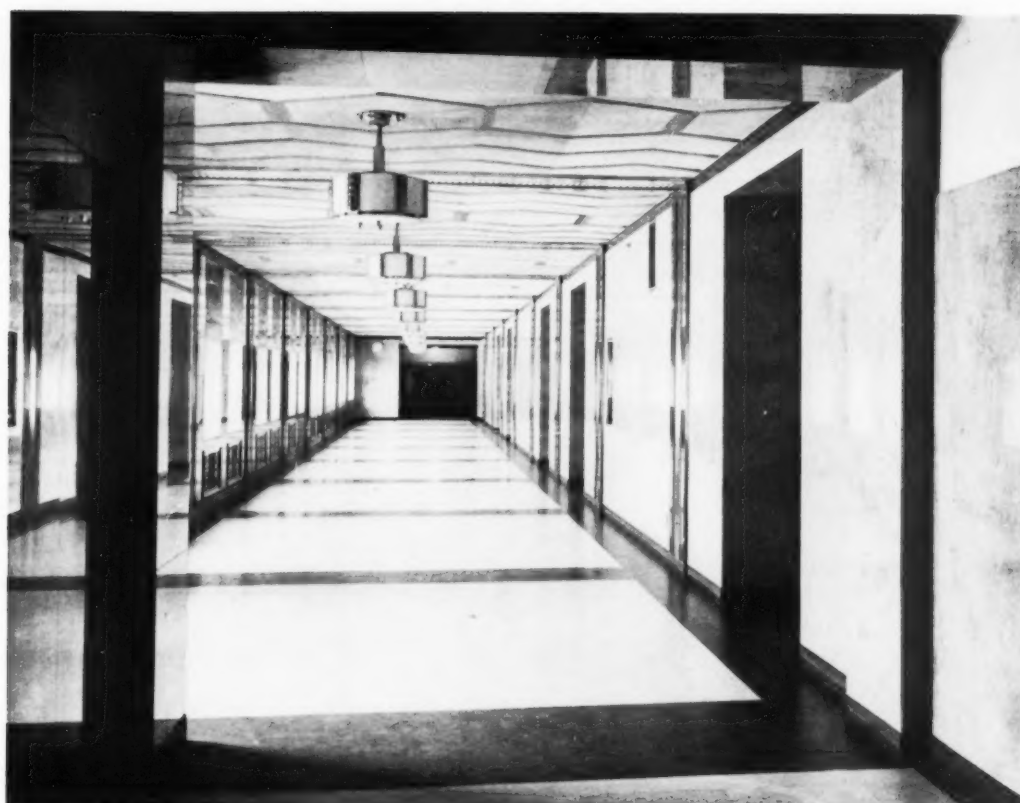


NEW DETROIT FEDERAL BUILDING
 DETROIT, MICHIGAN
 ROBERT O. DERRICK, INC., ARCHITECTS

SECOND FLOOR



FOURTH FLOOR



SEVENTH FLOOR CORRIDOR

Photograph by Robert W. Tebbs

SITE: Site of old Post Office. **SIZE:** Basement and ten stories; structure designed to carry two additional future stories to the height of 210 feet. **FOUNDATIONS:** To hard pan, 120 feet below street level. **Appropriation:** \$5,650,000.

The building accommodates nine government departments and several government bureaus, the official title of the building being "U. S. Post Office, Court House, Custom House, etc."

BASEMENT, FIRST AND SECOND FLOORS: Post Office Department; **THIRD FLOOR:** Departments of Treasury, Agriculture, Veterans' Bureau; **FOURTH FLOOR:** Department of Treasury (Customs), Labor (Immigration, Naturalization), Commerce (Foreign and Domestic, Steamboat Inspector); **FIFTH FLOOR:** Department of Treasury (Internal Revenue); **SIXTH FLOOR:** Departments of War (Lake Survey, Quartermaster, Air, Ordnance, Reserves, Recruiting, Engineering), Navy (Hydrographic, Navigation, Marine Corps); **SEVENTH FLOOR:** Department of Justice (Federal Courts); **EIGHTH FLOOR:** Department of Justice (Federal Courts and Offices); **NINTH FLOOR:** Departments of Justice (U. S. Commissioner, Marshal, Prohibition), Treasury (U. S. Coast Guard); **TENTH FLOOR:** Departments of Commerce (Radio), Justice (Investigation, Referees Bankruptcy), Treasury (Industrial Alcohol, Public Health), Agriculture (Weather Bureau, Animal Industry).

EXTERIOR: The building is entirely faced with limestone. The four sides are identical excepting that main entrances are placed on the north (Lafayette Boulevard) side, and on the south (Fort Street) side. A main corridor runs directly through the center of the building connecting these two entrances. This arrangement was made possible by a combination of local mail conditions and the cooperation of the postal authorities who developed a special mail handling system to attain building which has no rear elevation. Another undesirable feature, the exterior loading platform for mail trucks, is also eliminated by substitution of ramps which lead to an interior loading platform in the basement. The building is therefore symmetrical from any view.

A massive base, over fifty feet high, contains the Postal Department. Above this, four stories of offices and one of courtrooms are faced with fluted piers with a frieze of low relief carving in which are panels symbolical of the various governmental departments. The upper stories are set back slightly, forming the third unit which is a minor repetition of the one below.

COURTHOUSE





SCULPTURAL PANEL OVER MAIN ENTRANCE REPRESENTING LAW AND JUSTICE. CHARLES KECK, SCULPTOR.

JACKSON COUNTY COURTHOUSE KANSAS CITY, MISSOURI

KEENE & SIMPSON, WIGHT & WIGHT
and FREDERICK C. GUNN, Architects;
EDWARD F. NEILD, Consulting Architect

While the three hundred feet of height of this courthouse is the equivalent of 28 stories in the usual business building, the courtroom floors in this building actually are two stories in height, with balcony offices providing each large courtroom with plenty of office space for the use of lawyers and court attendants.

A practical arrangement of the courtroom is featured in this structure. The judge's bench is in one corner of the room, permitting a clear view of witnesses, jurors and audience. The jury box is so located as to give a clear view of the witness and the bench. The witness chair is placed against the rear wall in about the position that the judge's bench occupied in older courtrooms—a focal point for every eye in the room.

The floor materials vary from asphalt tile on the ground floor and a part of the first floor to rubber tile in the court corridors of the fourth, fifth, sixth, ninth and tenth floors. The floor treatment elsewhere is a terrazzo tile. Battleship linoleum is used generally on the floors of offices and in the courtrooms and court quarters.

Black walnut and white oak are the woods used in the cabinet work and trim. All furnishings and all metal equipment were designed especially for this building.

Two floors of jail accommodations are just beneath the execution chamber at the top of the building.

A dual system of heating and air conditioning is yet another interesting feature of this building. Huge steam boilers are responsible for courthouse comfort in winter, while through the same pipes air conditioning in the summer in parts of the building is made possible.

COURTHOUSE



BRONZE AND WHITE METAL PLACQUES OVER MAIN ENTRANCE DOORS. JORGEN C. DREYER, SCULPTOR.

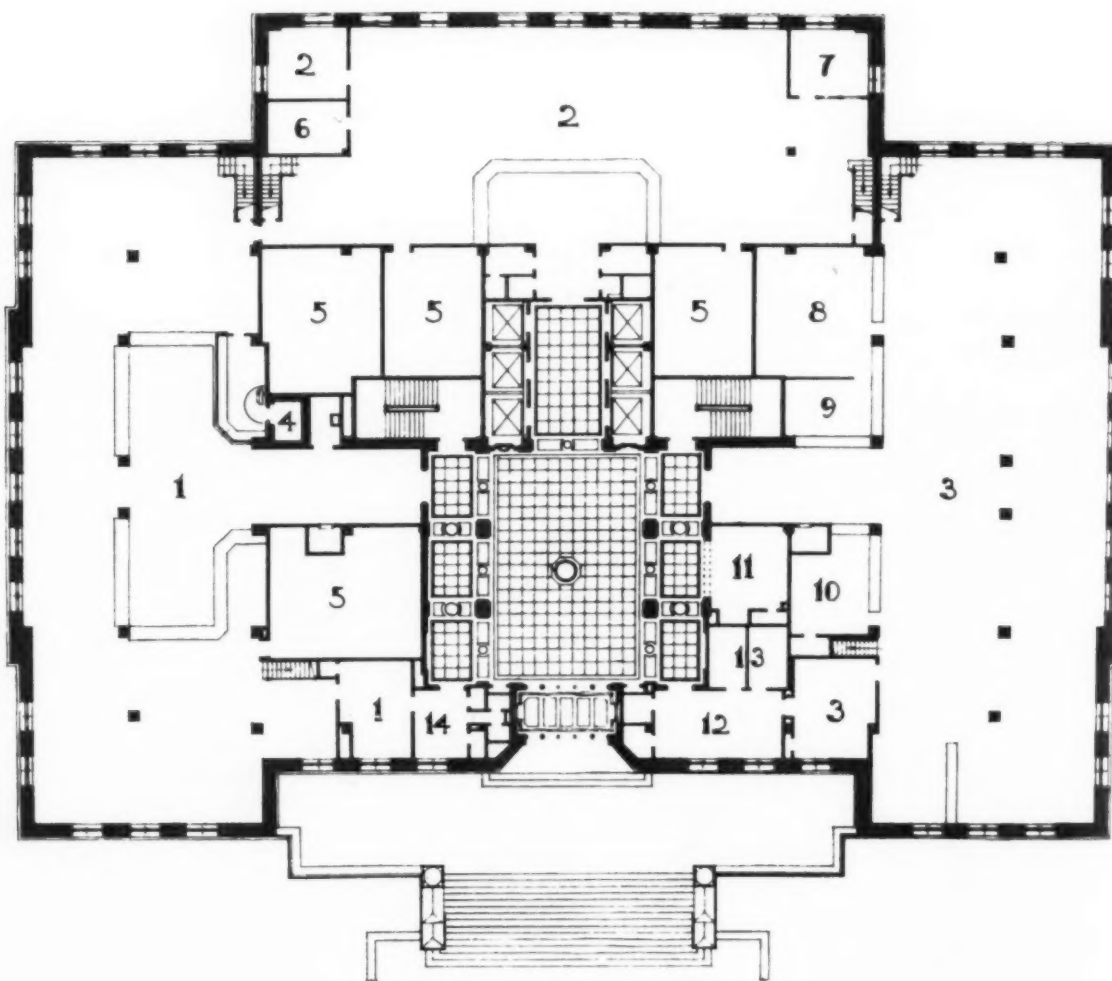
JACKSON COUNTY COURTHOUSE

KANSAS CITY, MISSOURI

KEENE & SIMPSON, WIGHT & WIGHT
and FREDERICK C. GUNN, Architects;
EDWARD F. NEILD, Consulting Architect

FIRST FLOOR

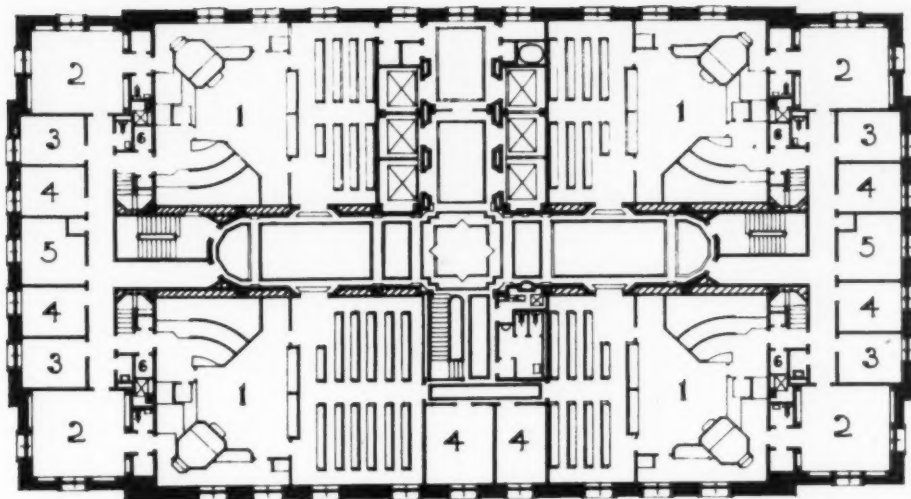
- 1 Collector
- 2 Assessor
- 3 Recorder
- 4 Cash Vault
- 5 Vaults
- 6 Supplies
- 7 Drafting Room
- 8 Delivery
- 9 Releases
- 10 File Index
- 11 Cigars
- 12 Marriage License
- 14 Ceremony
- 15 Telephones



COURTHOUSE

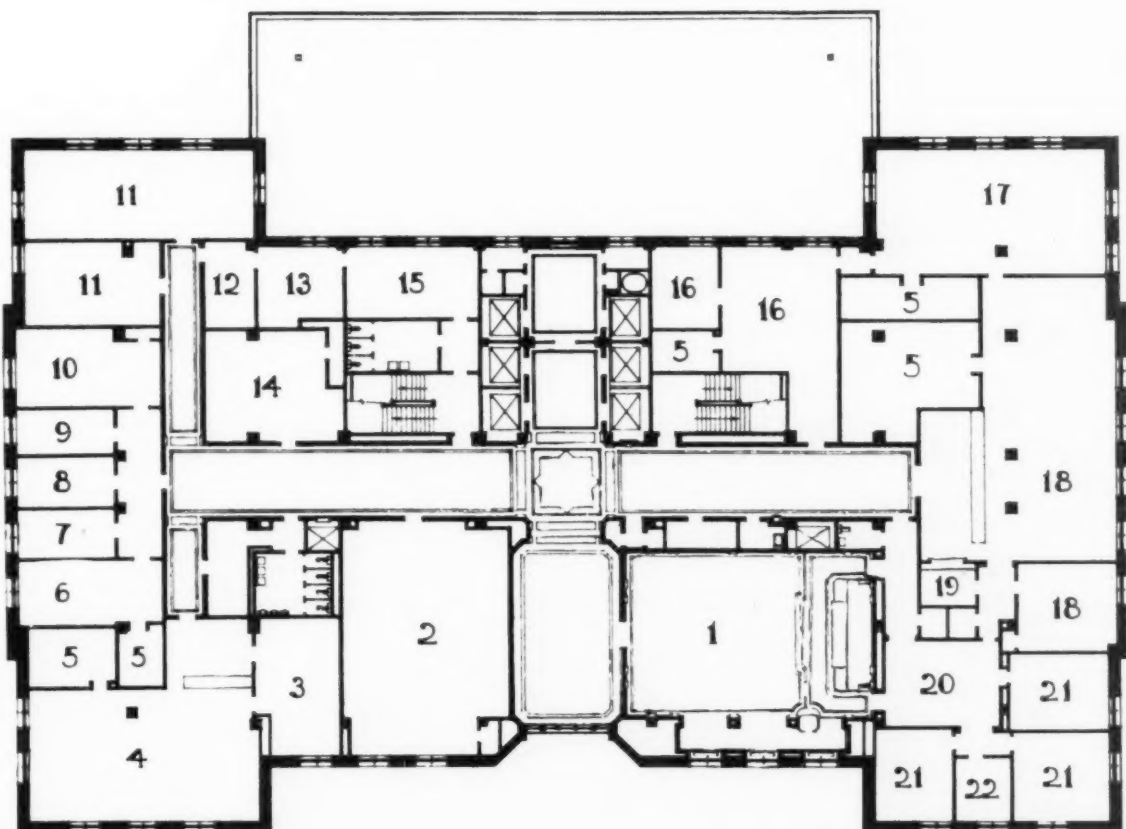
FIFTH FLOOR

- 1 Courtrooms
- 2 Judges
- 3 Clerk
- 4 Witness
- 5 Conference
- 6 Prisoner

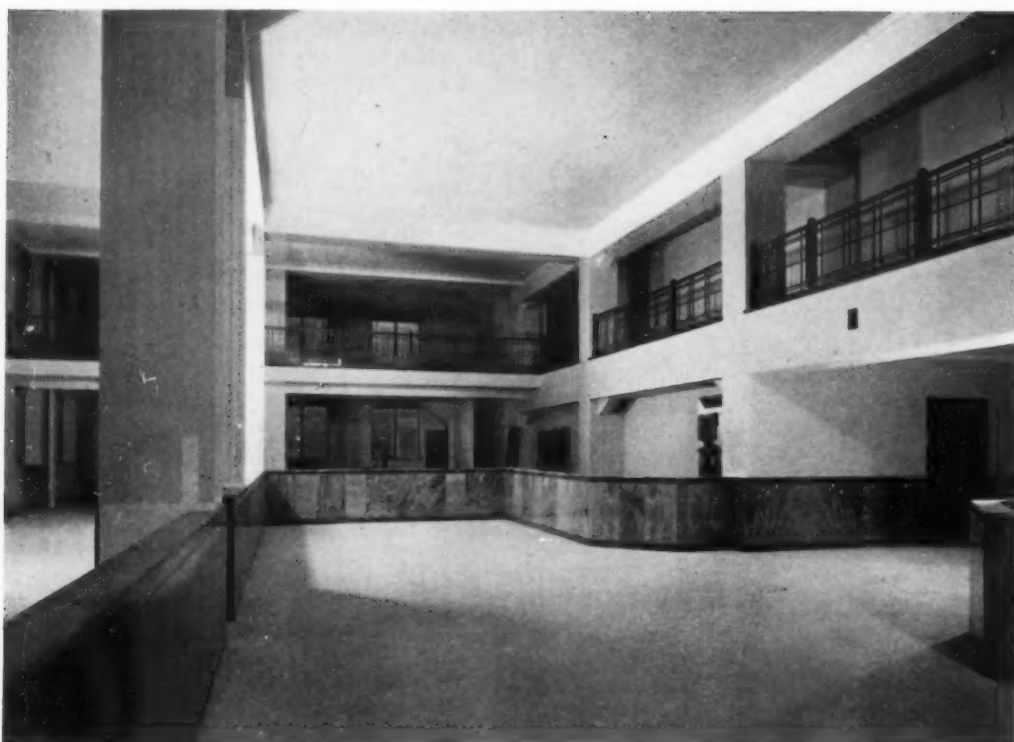


SECOND FLOOR

- 1 County Court
- 2 Special Workroom
- 3 Highway Engineer
- 4 Drafting Room
- 5 Vaults
- 6 Purchasing Agent
- 7 License Inspector
- 8 Deputies
- 9 County Investigator
- 10 Custodian
- 11 Hearing Rooms
- 12 Telephone Equipment
- 13 Telephone Switchboard
- 14 Storage Room
- 15 Emergency Room
- 16 Auditor
- 17 Workroom
- 18 Country Clerk
- 19 Licenses (Hunting and Fishing)
- 20 Anteroom
- 21 Judges
- 22 County Counselor



COURTHOUSE



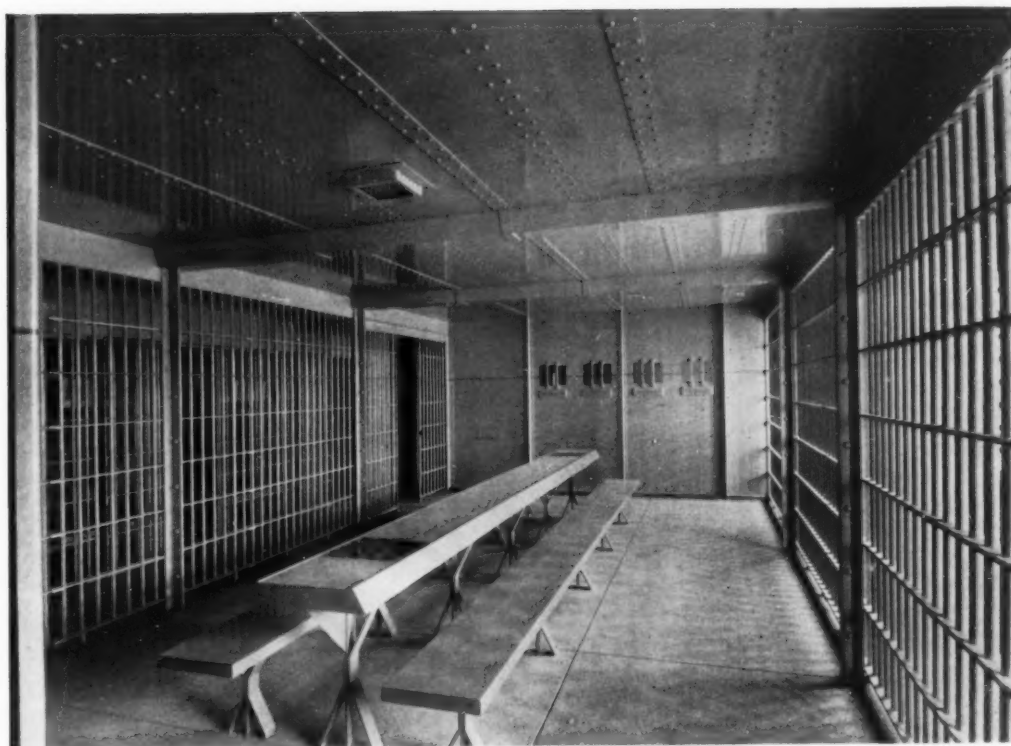
JACKSON COUNTY COURTHOUSE
KANSAS CITY, MISSOURI



Photograph by Harkins

Above: COUNTY COLLECTOR'S OFFICE. Left:
MAIN LOBBY AND FOYER AND ELEVATOR
LOBBY.

COURTHOUSE



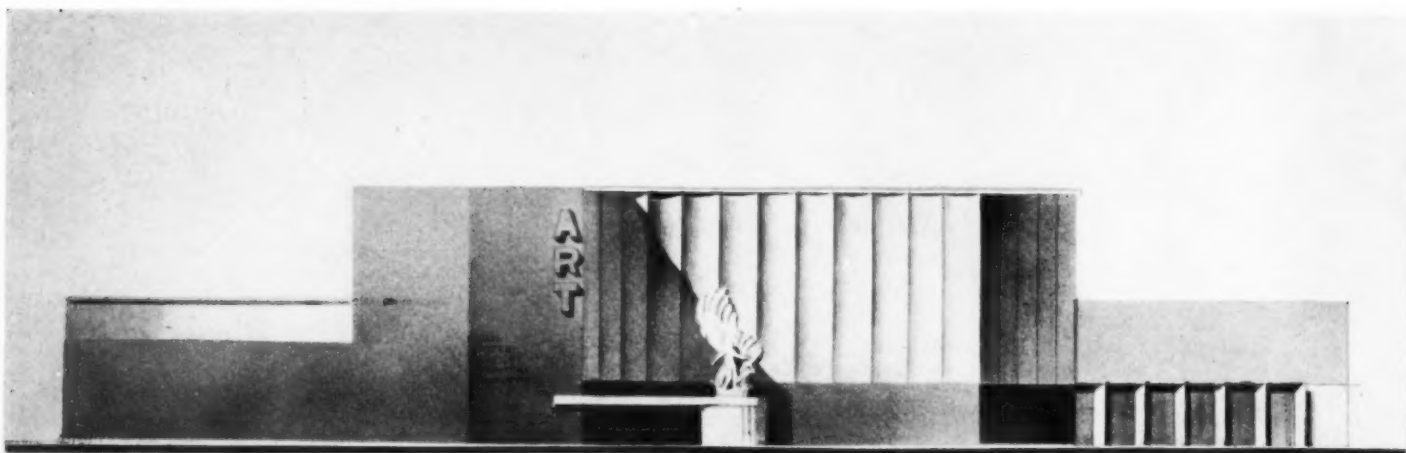
KEENE & SIMPSON, WIGHT & WIGHT
and FREDERICK C. GUNN, Architects;
EDWARD F. NEILD, Consulting Architect



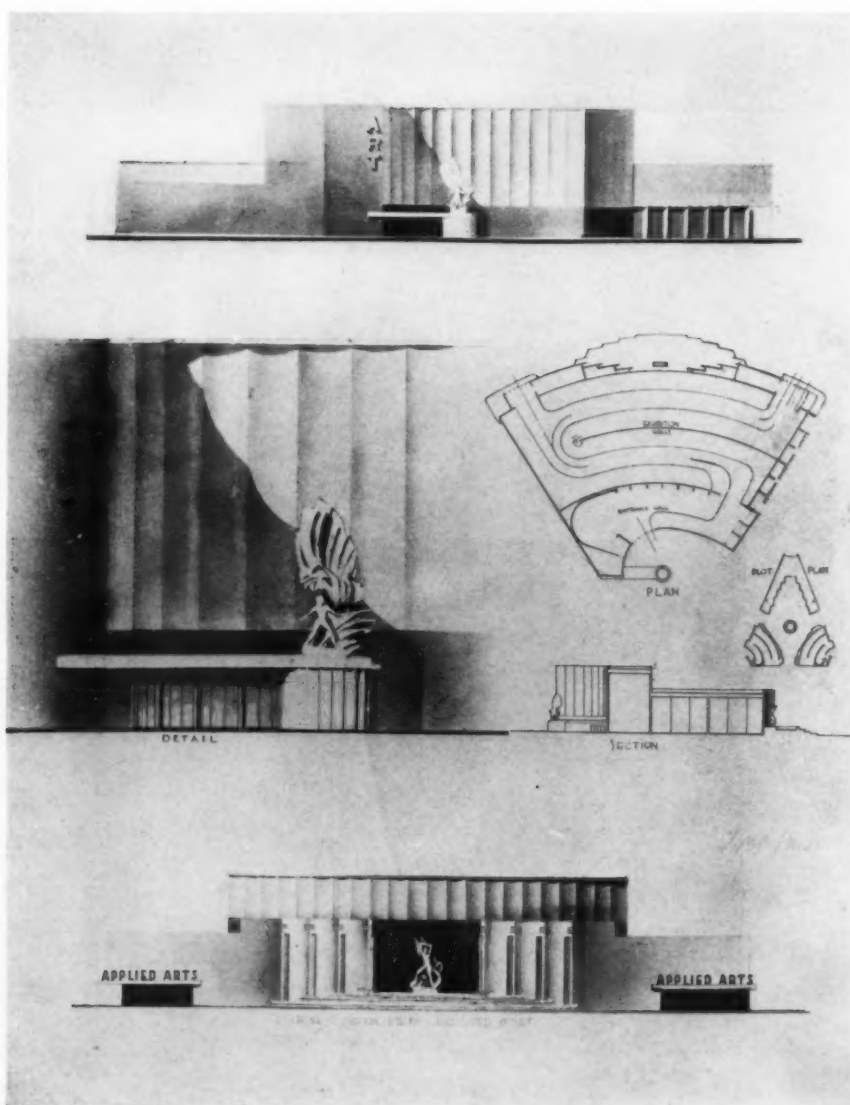
Above: JAIL DAY ROOM, TYPICAL FOR UPPER
PORTION OF BUILDING. Right: TYPICAL CIR-
CUIT COURTROOM ON FOURTH, FIFTH AND
SIXTH FLOORS.

Photograph by Harkins

COMPETITION



E X T E R I O R



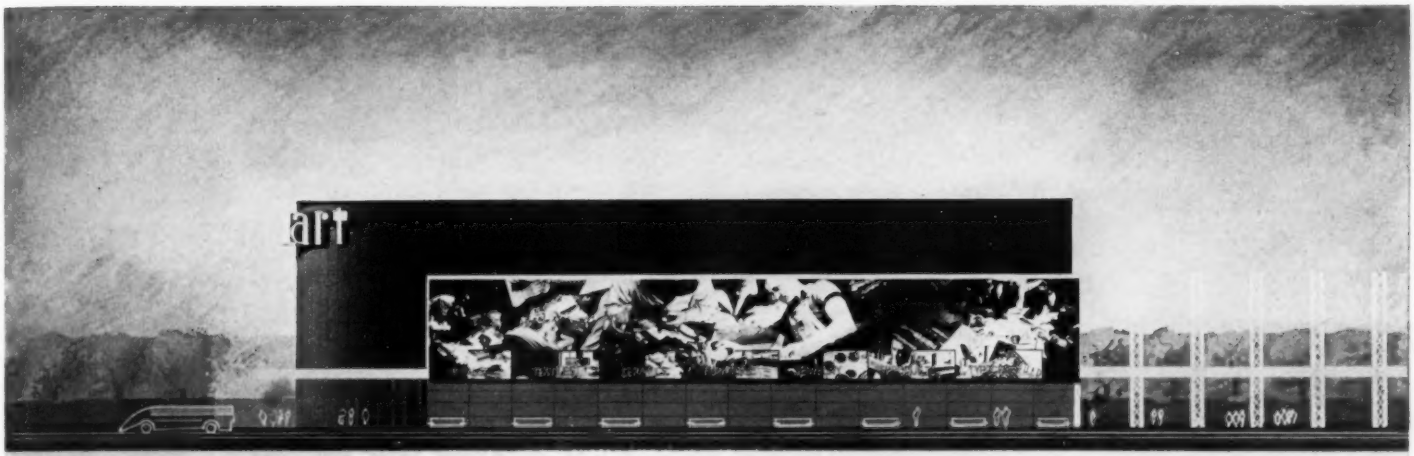
COMPETITION FOR THE DESIGN OF A TYPICAL BUILDING FOR THE NEW YORK WORLD'S FAIR OF 1939. The designs represented met the requirements of the competition for a one-story building, the first floor being at about the ground level, with an outside height at the main entrance not exceeding 80 feet. As presented by the terms of the Program of Competition, the exhibition hall was designed for construction with frame covered plaster or plasterboard inside and a general surface outside of plasterboard or stucco.

FIRST MENTION

BY GEORGE LYMAN PAINE, JR.

The exhibit building is without conventional or symmetrical niche for entryway. It has an aisle or circulatory and wending by curves through the entire structure. The designer's intent was to lead the spectator along the curved way by the constantly changing nature of the scene and at no time to leave him overwhelmed by "too much to be seen."

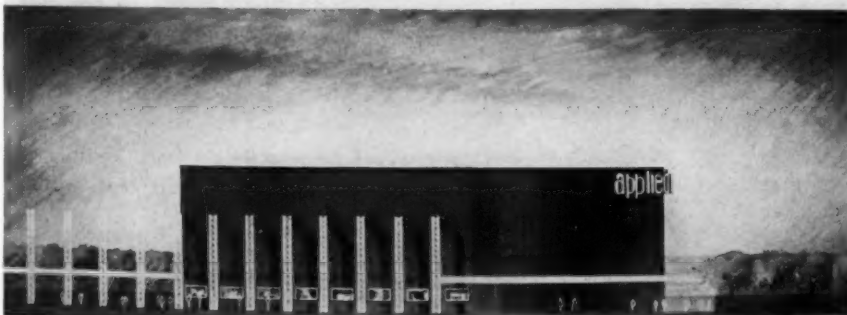
COMPETITION



E X T E R I O R



NEW YORK WORLDS FAIR 1939



Robert D. Kohn, member of the Board of Design of the Fair, served as professional adviser for the competition. The jury of award consisted of Stephen F. Voorhees, Gilmore D. Clarke, William A. Delano, Jay Downer, Charles Butler, William F. Lamb, R. H. Shreve and Walter Dorwin Teague, all of New York City, and Paul Cret of Philadelphia and Louis Skidmore of Chicago.

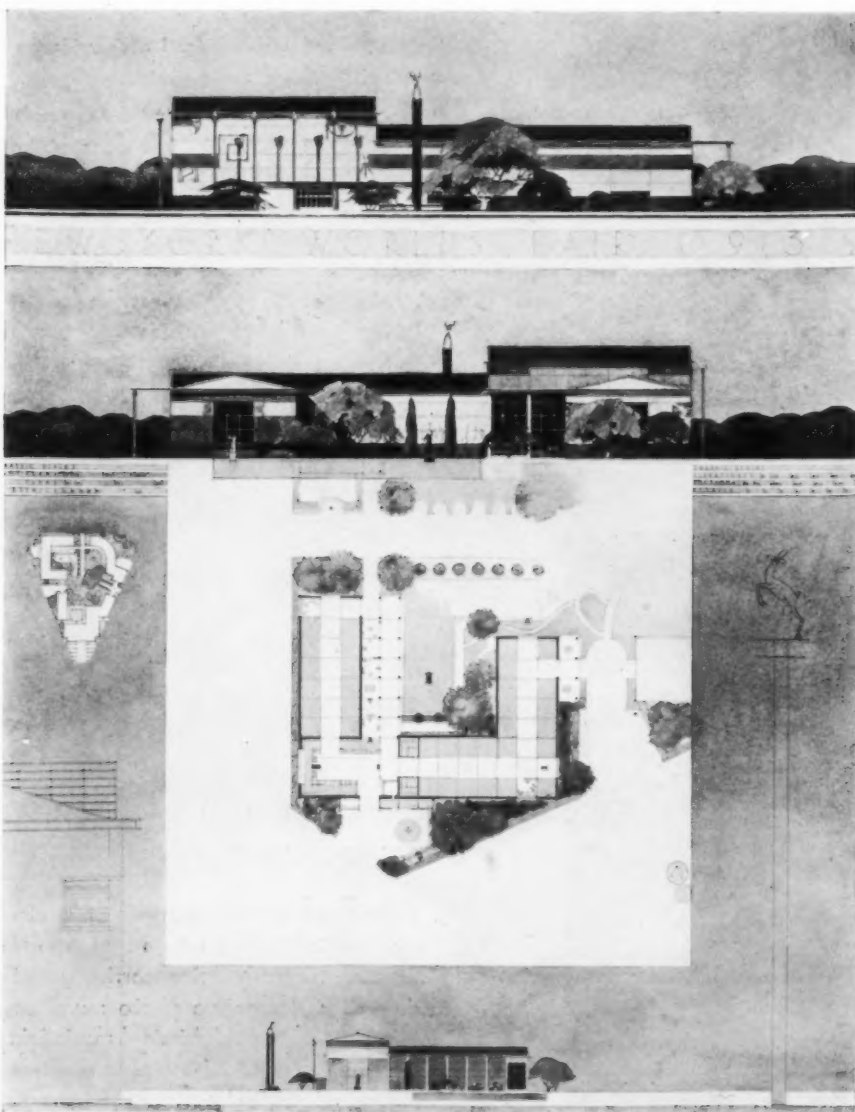
SECOND MENTION BY PETER COPELAND

Mr. Copeland's scheme consists of a circular grand hall, giving into a rectangular exhibit space. The building carries on its outside wall a decorative photo mural of gigantic dimensions. Light steel masts join buildings and courts and are proposed for lighting or other display.

COMPETITION



E X T E R I O R



THIRD MENTION

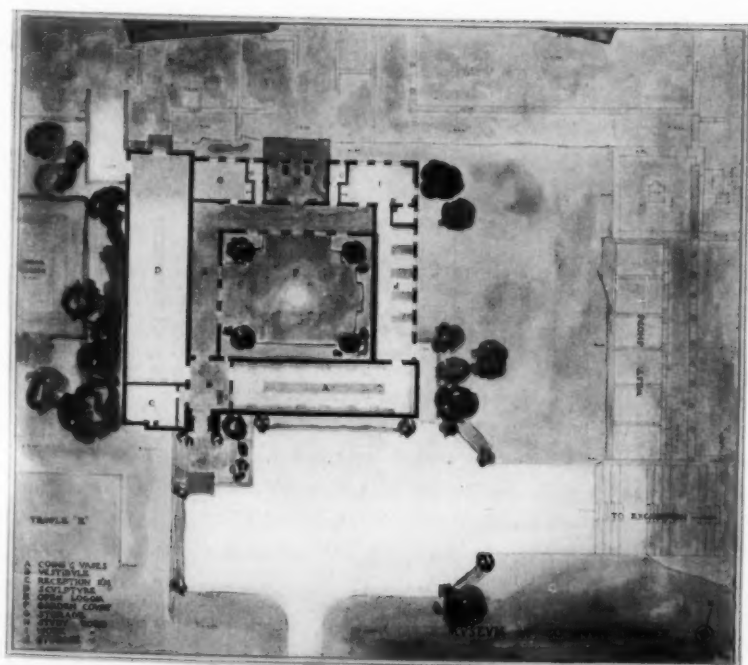
BY PETER COKE SMITH

The plan employs paths, pools, fountains, decorative columns, trees and portieres to obtain an informal setting in and about the exhibition hall. The building depicted is intended to be treated with bold Pompeian colorings, terra cottas, blues, whites and blacks.

The jury gave honorable mentions of \$100 cash value to designs submitted by the following men from the metropolitan area of New York: Frederick G. Frost, Jr.; Morris Ketchum, Jr., and Richard Boring Snow; Ralph E. Leff and Max M. Feldman; Johnson and Birnbaum; William Muschenheim and Morrison Broun; Robert W. McLaughlin and Stamo Papadaki, collaborator; Leonard Dean; J. Gordon Carr; John Hironimus and George W. McLaughlin, collaborator; Landefeld and Hatch, and Rene Chambellan, collaborator; Aspinwall and Simpson; Dwight James Baum; Frank E. Johnson and Charles F. Schillinger, collaborator; Joshua D. Lowenfish; Louis Allen Abramson; W. K. Harrison and J. A. Fouilhoux; I. Woodner-Silverman; Francis Keally; Robert W. Cutler; Maximilian Bradford Bohn and Charles Beeston.



GENERAL VIEW



CORINTH MUSEUM
CORINTH, GREECE

W. STUART THOMPSON, ARCHITECT,
OF THOMPSON AND CHURCHILL

PLOT PLAN

MUSEUM



EXTERIOR VIEW

CORINTH MUSEUM

CORINTH, GREECE

The Corinth Museum at Corinth, Greece, was built for the Greek Government by the American School of Classical Studies at Athens, of whose managing committee Professor Edward Capps of Princeton University is chairman. The building houses the antiquities found at the site.

The building is in the midst of the ruins of the ancient city of Corinth and because of its location it has no architectural pretense or ornamentation on the exterior. All exhibition rooms are built around a central courtyard used for exhibition of Byzantine sculpture. A friendly, comfortable museum, in which one wants to linger and study, has been attempted. Besides the usual exhibition rooms a reception room, a study library and view room (containing maps and



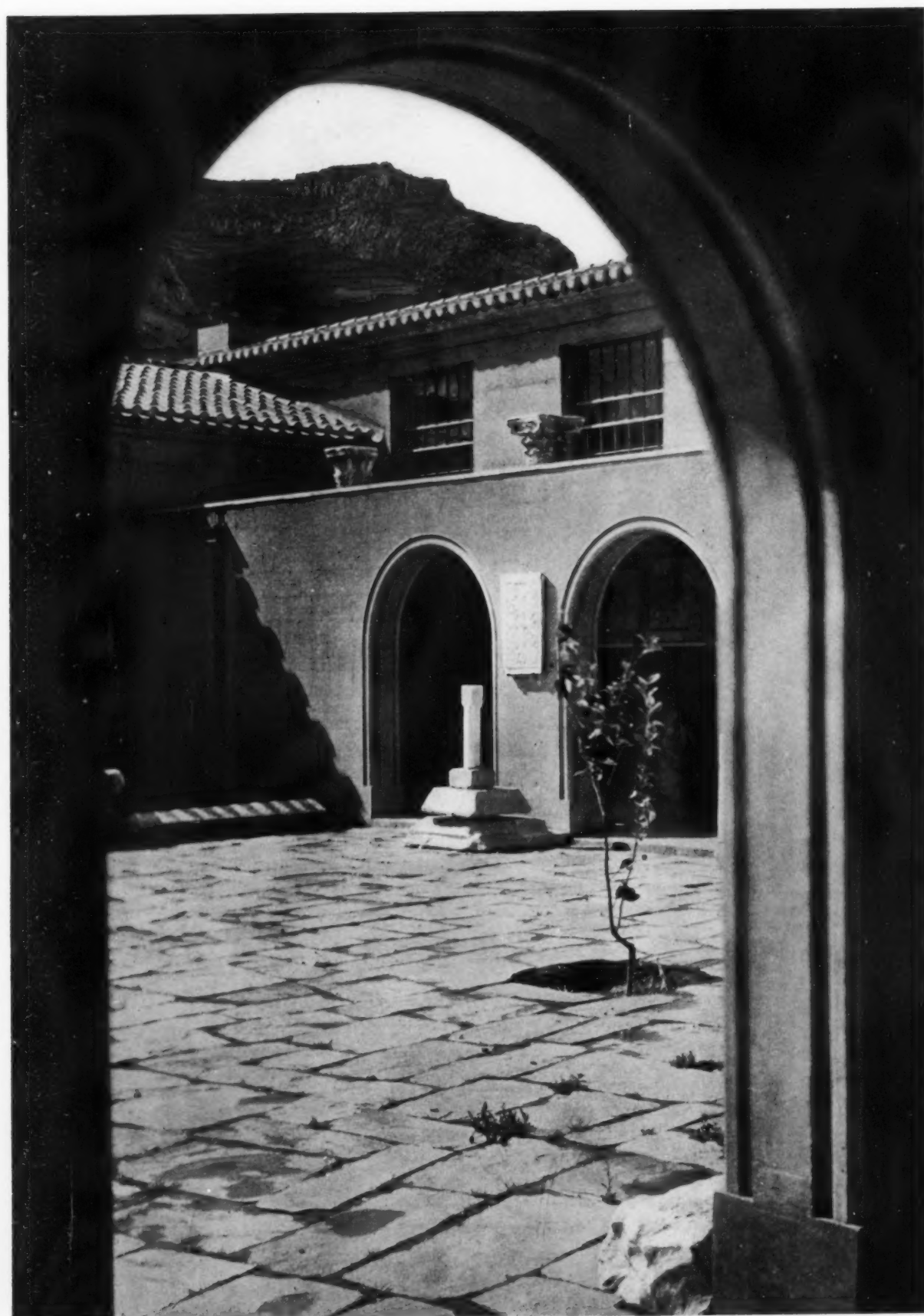
INTERIOR OF LARGE SCULPTURE HALL

W. STUART THOMPSON, ARCHITECT, OF THOMPSON AND CHURCHILL

books on Corinth) have been included. The courtyard has been planted and has seats and benches.

Corinth has been destroyed by earthquake thirty times in the past two thousand five hundred years. Mr. Charles Mayer, a New York engineer, created an earthquake-resisting structure. His design called for doubly reinforced concrete monolithic walls, 1'0" to 1'6" thick. Walls, floors, and ceilings were tied together as one mass. No applied finish or plaster was used. Color was mixed integrally in concrete, exterior surface being hammer dressed and interior surface rubbed. Windows are metal detention sash and doors special bronze. The roof is of local hand-made yellow and red tile tied down with copper

MUSEUM



INTERIOR

CORINTH MUSEUM

CORINTH, GREECE

468

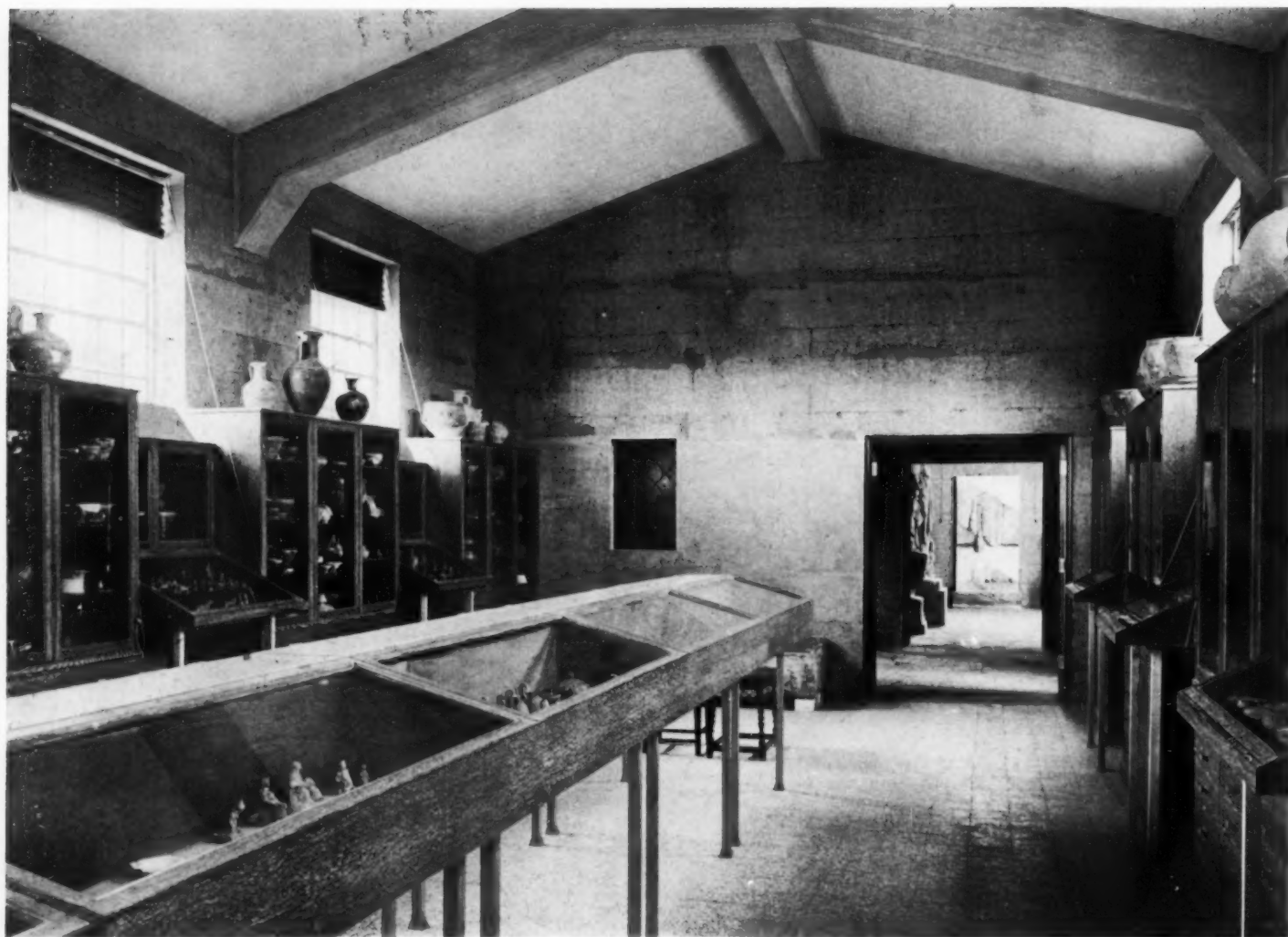
THE ARCHITECTURAL RECORD

COURT



W. STUART THOMPSON, ARCHITECT, OF THOMPSON AND CHURCHILL

MUSEUM



VASE ROOM

CORINTH MUSEUM

CORINTH, GREECE

W. STUART THOMPSON, ARCHITECT, OF THOMPSON AND CHURCHILL

straps. Floors of exhibition rooms are of terrazzo tile and floor of courtyard is of unpolished Tenos marble slabs. Plumbing, heating, hardware, doors are imported from America.

The building in color matches the yellow brown tone of the rocks of Acrocorinth, the mountain forming the background. Windows are painted a dull red-brown. The interior of the courtyard is gay with blue window trim and with yellow and orange stripes around the arches.

The architects designed the furniture appropriate for use in this museum. The exhibits in the vase cases are intensified by means of light-reflecting mirrors.

TECHNICAL NEWS AND RESEARCH

DECEMBER 1936

THE TECHNICIAN ON THE CULTURAL FRONT. An analysis of design and the forces of industrialization. By K. Lönberg-Holm and C. Theodore Larson 472

TELEVISION NETWORKS. Sending sight and sound over the air presents a new factor in design for environmental acoustics . . . 474

ACOUSTICAL DESIGNS. Current research investigations give promise of continued progress in architectural acoustics 476

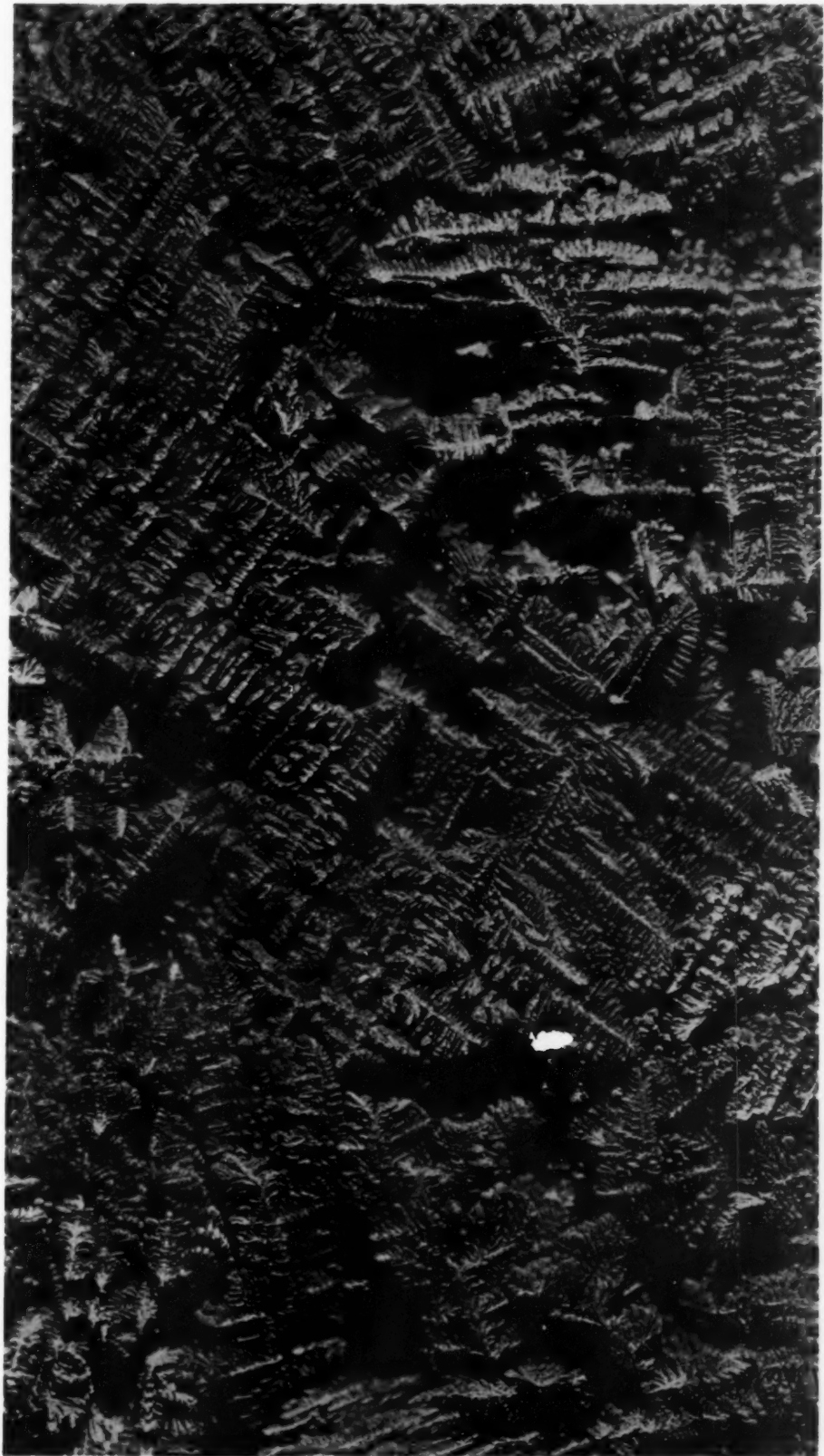
RADIO STUDIOS. Architectural forms evolving out of requirements of sound control are described by Michael Rettinger . . . 478

SOUNDPROOF WINDOWS. Sound tests by the National Physical Laboratory in England are reported by K. M. Constable . . . 479

CONTROL EQUIPMENT. Reports of new devices developed in the fields of heating, air conditioning, lighting, wiring 480

BUILDING MATERIALS. Reports on new products offering paintability, flexibility, insulation, termite protection 482

An architectural alloy under the microscope: This magnification of 25 diameters shows how aluminum crystallizes from a melt. When such a casting is rolled or extruded, dendrites are broken into fragments, making the alloy more uniform. (See also "The Alloys: a Complex New Technology" in book review section, page 12.)



Macrograph by G. W. Wilcox, Aluminum Research Laboratories

THE TECHNICIAN ON THE CULTURAL FRONT

K. LÖNBERG-HOLM

and

C. THEODORE LARSON

The cultural front comprises all activities directed toward the expansion of social wealth. It is expressed in the continuous advancement of standards of productivity. The position of the technician (artist, architect, engineer) on this front can be defined only through an analysis of economic and technical forces in production.

All production—products, enterprises, ideas—can be analyzed relative to the phases of a characteristic cycle of performance: (1) research, (2) design, (3) fabrication, (4) distribution, (5) utilization, (6) liquidation. Each phase of this cycle is subject to planning control, for all are interrelated and interacting; a new design implies a liquidation of the old design. The continuity of this process is exemplified in the building field—the production of any structure does not end until its final demolition.

The driving force in business is the making of profits. The various phases of production all serve as means to this end. For these profits to be made, there must be a continuous increase in commercial activity, either by progressively adding new markets or by more intensively integrating the existing mechanism of production. In either case the profits are obtained (1) through ownership claims or (2) through production control, which involves ownership of the means of production. The status of the technician in the business economy depends on the market value of his performance.

The pace of industrial expansion is geared to the two forms of profit-making. Profit through possession tends to slow down production by emphasizing minimum liquidation; profit through production tends to speed up production by emphasizing maximum output. When planning control over liquidation is lacking, then friction occurs and a breakdown of the production routine is the ultimate outcome unless adjustments are made in the claims of ownership. This is evident in the repetition of economic "crises" and "recoveries" resulting in an increasing centralization of control.

Monopoly control of production for the preservation of existing ownership claims leads to the economic self-sufficiency and isolation of the totalitarian state (fascism). The drive for profits, however, results in an increasing pressure for new markets. Technical development becomes increasingly the design of instruments of military aggression. In housing, technical advances are expressed in the production of gasproof and bombproof "shelters." Liquidation becomes the planned destruction of new productive forces instead of the elimination of obsolete restrictive forces.

For a continuous advance in production standards there must also be a continuous liquidation of obsolete products, enterprises and beliefs. This is possible only in an economy where property relations impose no restrictions on the continuous development of new productive forces. With a centralized planning control that integrates all

the phases of the production cycle, all lines of activity can be brought up to the par set by the most advanced standards of productivity. This expansion of social wealth implies increasing industrialization.

The social importance of the technician is stepped up as his function becomes the promotion of social productivity (advancement of human well-being and knowledge) as well as the promotion of mechanical productivity (greater efficiency of the physical plant). The pace of industrial expansion can be speeded up by planned liquidation of obsolete production and by planned research for new designs offering higher standards of productivity. This depends on a scientific control of production—the recognition and application of the most advanced standards in science, technology and sociology.

Such design potentialities advance continuously as increasing industrialization provides new instruments of control for the expansion of social wealth. The advance of science and technology is reflected in a shift in emphasis from standards of minimum subsistence to standards of maximum performance. Design becomes the control of environmental forces (human activities, matter and radiation) for the improvement of human life. The conception of housing as a means of protection against nature or society changes to a conception of structures as specific means for environmental control.

The introduction of new industrial techniques makes possible a new design integration which is needed for a more precise control of environmental forces. New organizational and structural forms, impossible with traditional productive relationships, are implied. The advance in environmental control is expressed in an increasing surplus of human energy which is released from drudgery and becomes available for the promotion of social productivity. With increasing integration in production, individual productivity is stepped up and society is enabled to create new and better environments.

The measure of social power is the degree of integration in each field of productive activity. This is expressed by increasingly worldwide development of production networks—distribution of the productive plant as determined by physical and social resources, power, communication and transportation systems. Increasingly the emphasis in production is placed on precision control. The criterion of design becomes the integration of motion (control of time and matter). Advances on the cultural front are measured by an expanding range of human activity and by an acceleration of events.

The cultural front thus becomes the specification of standards and the control of increasing ranges of performance. Advances involve an increasing degree of integration of all lines of activity along all phases of the production cycle. This integration of productive activities presupposes the liquidation of obsolete economic relationships and the emergence of new relationships in line with industrialization.

The technician's position thus becomes—

(1) *On the economic front:* affiliation with organizations promoting economic security and social progress.

(2) *On the technical front:* design and advancement of new instruments promoting social and industrial integration.

TELEVISION NETWORKS

On November 2 regular television service began in London, according to a British Broadcasting Corporation announcement. One-hour programs are sent out from the Alexandra Palace station twice daily except Sundays.

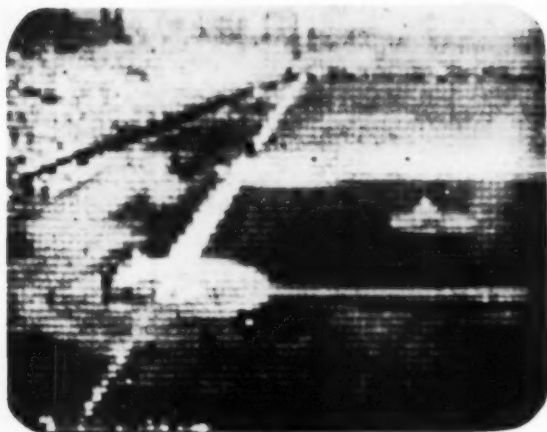
On November 6 the first complete program of television entertainment was broadcast from the 10-kilowatt 6-meter transmitter atop the Empire State Building in New York. The show—a phase of the field tests now being conducted by Radio Corporation of America—was staged in the NBC television studio in Radio City and reproduced on 15 television receivers lined up in a darkened room on the 62d floor of the Rockefeller Center skyscraper for observation by 200 invited guests.

The present field tests do not mean that regular television service is now at hand, the American engineers point out emphatically. Many factors have yet to be investigated and coordinated. Nevertheless, it is said, results already attained in laboratory experiments go beyond the standards accepted for the inauguration of experimental television service in Europe. "We believe we are further advanced scientifically in this field than any other country in the world."

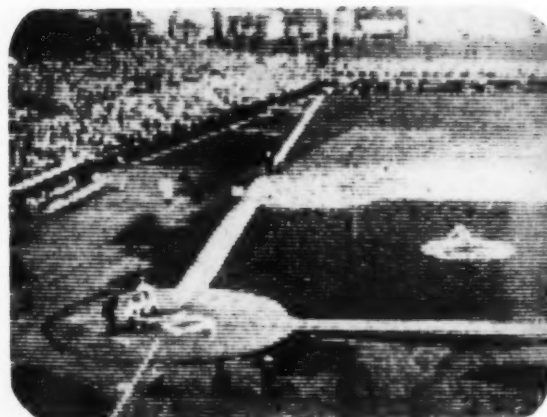
The problem of integration is so complex that it is hazardous to forecast when television will be available as a public service. The year 1938 is sometimes mentioned, however, and one authority has predicted that within 10 years all those who now have radios in their homes will be operating television dials. The significant step at present is that television has been brought out of the laboratory and into the field for tests by which a basis may be set for technical standards.

INCREASING PRECISION: Clearness in the television images depends largely on the number of scanning lines. The accompanying views are not photographs of actual television images, but photographic equivalents made by RCA to facilitate the study of images. Pictures now consist of 343 lines. An increase to 441 lines is anticipated.

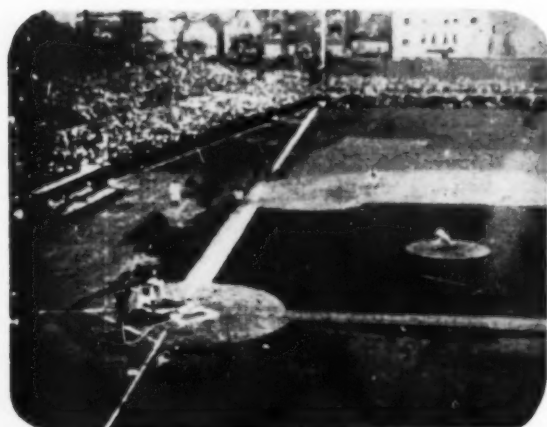
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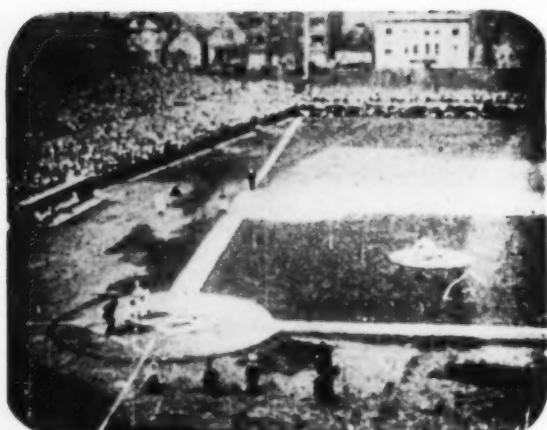
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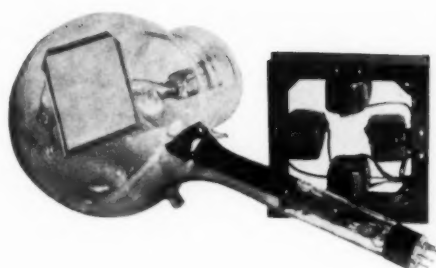


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RCA iconoscope — the television "eye"

SENDING BOTH SIGHT AND SOUND OVER THE AIRWAYS

The need for integration in the television system, because of the close functional relationship of transmitter and receiver, has been described by David Sarnoff, president of RCA—

"Television is a highly complicated system of transmitting and receiving elements with thousands of interlocking parts, each of which must not only function correctly within its own sphere of activity, but must also synchronize with every other part of the system. In broadcasting of sight, transmitter and receiver must fit as lock and key.

"On the other hand, broadcasting of sound permits a large variety of receiving devices to work acceptably with any standard transmitter. Notwithstanding the great progress that has been made in sound broadcast transmission, a receiving set made ten years ago can still be used, although with great sacrifice in quality. This is not true in television, in which every major improvement in the art would render the receiver inoperative unless equivalent changes were made in both transmitters and receivers.

"Important as it is from the standpoint of public policy to develop a system of television communication whereby a single event, program or pronouncement of national interest may be broadcast by sight and sound to the country as a whole, premature standardization would freeze the art. It would prevent the free play of technical development and retard the day when television could become a member in full standing of the radio family."

The required technical progress presupposes a rapid rate of obsolescence. For this reason a limited number of receivers have been manufactured; at present they are being used at strategic points of observation for testing and improving the RCA television system under actual service conditions. The programs are likewise experiments intended to determine the most desirable studio technique.

Networks: Because of the quasi-optical behavior of the ultra-short waves, the maximum range of a transmitter depends on the optical distance to the horizon and increases with the height of the antenna. The Empire State Building transmitter (1,250-foot altitude) has a range of about 45 miles. The average station is limited to a range of 25 to 30 miles. The wide band required in television makes impossible the transmission of images over existing telephone or ground line systems, as in the case of radio, so new wire facili-

ties will have to be created before an interconnected service can be rendered on a nation-wide basis. Such a coaxial cable is now being installed between New York and Philadelphia by engineers of Bell Telephone Laboratories.

Receivers: A receiving set at present is much like a radio console cabinet in appearance and reproduces pictures on a reflecting-mirror screen measuring $7\frac{1}{2}$ by 12 inches. Continued progress in obtaining greater luminescence and better definition of images is indicated in laboratory experiments, particularly on screens made of multiple synthetic crystals. In a new German invention, according to a U. S. Bureau of Foreign and Domestic Commerce report, a $2" \times 2\frac{1}{2}"$ picture on the flat end of a cathode-ray bulb can be enlarged and thrown on a 3-foot screen which stands separate from the receiver.

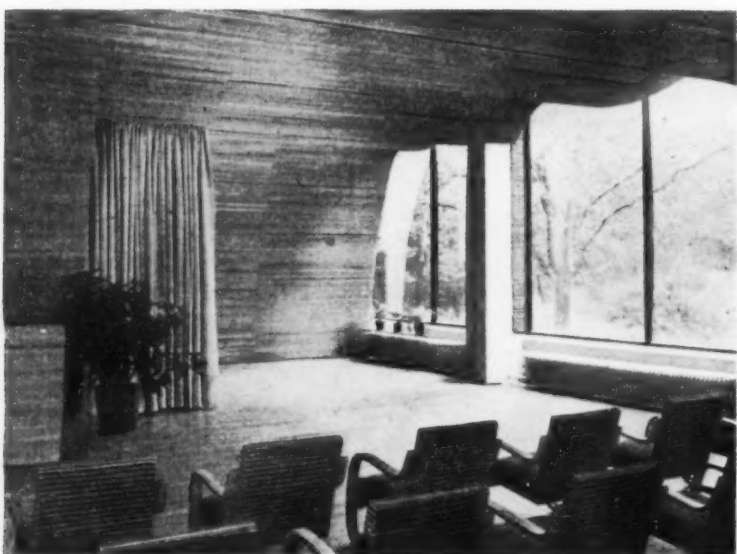
Architectural integration: Planning for television in the home is as yet an uncertain task. Provision must be made for a short-wave aerial, and this should be at the highest possible point to be most efficient. At present the images are best observed in low to dim light; the walls of the Rockefeller Center television room, for example, are draped in black. But as an RCA official observes—"It seems entirely likely that by the time television may be ready for general use, more brilliant images will have been achieved. In this, and in other directions, the art is still developing, and what may be a consideration today may not be a factor say a year from now."

At present the maximum distance for viewing the screen is about 10 feet, which makes the problem essentially a careful positioning of the television cabinet as a piece of furniture in the room. Obviously it should not be illuminated by direct light from a window. Enlarged images projected on a separate screen or on the wall constitute a different problem.

Inasmuch as television is intended to supplement radio broadcasting by adding sight to sound, improvements can also be anticipated in the transmission of sound. Very likely a much fuller range of tonal values will become obtainable, but this effect will be lost unless there is as precise a control of sound in the home as in the broadcasting studio. Progress in this direction implies the possibility of separate alcoves or rooms—"television theaters"—especially designed for the efficient reception of both sight and sound.



Courtesy Bouzekundig Weekblad Architectura



Courtesy The Architects Journal

ACOUSTICAL DESIGNS

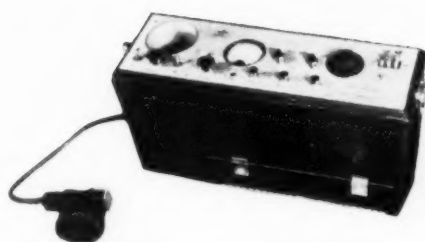
Since 1930 advances have been rapid in the science of sound. New instruments of measurement have made possible a precision control in the isolation or production of sound according to desired acoustical patterns. New materials have been developed with specific values of reflection, transmission, absorption. The architectural application, however, has usually been remedial in character, for generally the acoustical engineer is called in to "correct" conditions only after the building has been erected.

Greater precision in sound control demands a closer integration of architecture and acoustical design. So far the highest standards of performance have been set by broadcasting studios. These rooms must be designed for specific periods of reverberation, and out of these requirements radically new architectural shapes and proportions are evolving. The new studio designs are structural expressions of the mathematical equations for the control of sound.

Different requirements imply different design solutions. For ordinary speaking purposes a low period of reverberation, i.e., a "dead" room, is desirable. For music the reverberation period should be high and the auditorium relatively "brilliant." Reverberation time is essentially an index to the acoustical quality of a room.

Continued progress in the direction of better structural integration of acoustical requirements is promised by current research and laboratory work. These investigations are expected to lead to the rapid development of new facilities for producing sound and for controlling the distribution and reception of sound.

SOUND CONTROL: (1, 2) Broadcasting studios in the new AVRO building at Hilversum, Holland, by Merkelbach and Karsten, architects. (3) Lecture hall in new library at Viipuri, Finland, by Alvar Aalto, architect; the ceiling contours permit speakers to rise anywhere and be equally audible everywhere.



sound level meter — acoustical "ear"
(Electrical Research Products, Inc.)

CURRENT RESEARCH IN ARCHITECTURAL ACOUSTICS

Acoustical materials: The complexity of modern acoustical requirements is indicated by Paul J. Washburn of the Johns-Manville staff, who writes:

"The problems in broadcasting studios have taken a prominent part in our research program during the past two years, because of the large amount of work that has been going on and is being planned in this particular field. The improvement of speech in-put equipment as well as the transmitter stations has made it necessary for us to develop acoustical materials that will properly take care of new conditions. The speech in-put equipment today covers a wider range of frequencies with an elimination of the peaks than the older equipment. Consequently, it has been necessary for us to develop acoustical materials that have good absorption at certain frequencies, particularly at the lows, in order to eliminate the 'booming' effect of the bass instruments—yet it has been necessary not to absorb the high frequencies to a great extent, since the brilliant characteristic of studios depends largely on the highs. Practically all conventional materials have excellent absorption at high frequencies, and very little, if any, at low frequencies."

Acoustical models: Recently, according to the *Industrial Bulletin* of Arthur D. Little, Inc. (No. 113: June 1936), the acoustical engineers have been experimenting with "model" sound—the higher audible frequencies ("supersonics") with their smaller wave lengths are used for the study of reflections and echos in small-scale replicas of halls and auditoriums. F. R. Watson of the University of Illinois, in his "ripple tank" tests, has been using a pool of mercury shaped to conform to the contour of auditorium walls—disturbance of the mercury produces wave patterns which can then be observed. Vern O. Knudsen of the University of California, who experimented several years ago with "spark" photographs of auditorium models in collaboration with L. P. Delsasso, writes that further work in this field is planned for the coming year. Prof. Knudsen also observes in his letter—

"The use of acoustical models in studying the reflection of sound in buildings should be encouraged. The acoustics of buildings since the days of W. C. Sabine has been almost entirely a matter of materials, and the matter of shape has been very much overlooked. The uniform

distribution of sound throughout the entire seating area of an auditorium is an important matter. It is also important that the reflected sound unite with the direct sound with very little time lag—preferably not more than four hundredths of a second, which would correspond to a difference of path length of 45 feet. Important contributions to this phase of architectural acoustics will come from the study of the distribution of sound in laboratory models."

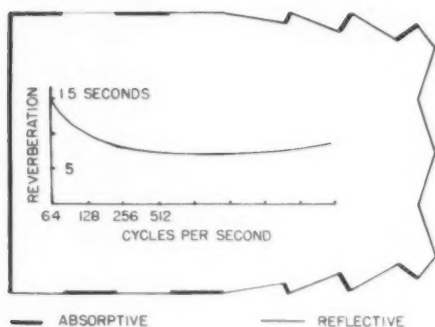
Electro-acoustics: Another approach appears in the development of sound-producing apparatus. The relative advantages are pointed out by Frank Massa of the research staff of RCA Manufacturing Company, Inc.—

"The problem of sound reflections was far more important in the days before public address systems were invented than it is today. At that time, only the speaker's voice furnished the entire sound energy which was available for distribution throughout the auditorium. To utilize this limited power to the greatest possible advantage required carefully designed walls which directed every possible bit of radiation to the area occupied by the audience. Of course, even in an ideally perfect auditorium the 'coverage' was limited by the intensity of the speaker's own voice.

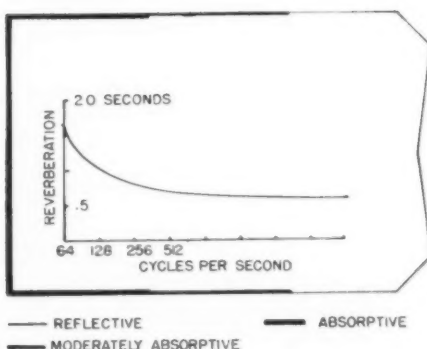
"Today our problem is somewhat different. By employing public address systems, we are concerned primarily with the distribution of the direct sound radiation from the loudspeakers. The reflected energy from the walls of the auditorium is of secondary importance except that it must be relatively small in order not to interfere with the direct sound. As a matter of fact, our greatest efforts are directed toward securing proper directional characteristics in our loudspeakers in order that all frequencies may be uniformly spread over the entire area occupied by the audience. Very little sound is sent out by the loudspeakers in other directions, so that the ratio between direct and reflected sound arriving at the audience is quite high. In this way we do not depend so much on reflections to secure proper sound distribution.

"The use of electro-acoustic apparatus in sound reproduction has given the architect much more freedom in the design of his auditorium. It has also permitted the construction of assembly halls and theaters much larger than could be built in the past."

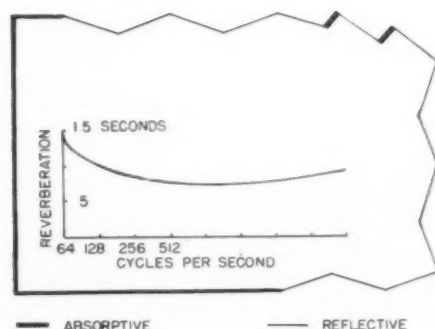
RADIO STUDIOS DESIGNED FOR CONTROL OF SOUND



1



2



3

The new architectural forms evolving out of the specialized requirements of sound broadcasting and recording are described by Michael Rettinger, acoustic engineer, Los Angeles.

Music is not just one absolute tone after another, but a sequence of tone relationships modified at every moment by the player and the room together. The all-but-imperceptible tone adjustments that constitute musical "color," "depth" and "personality" are to a great extent predicated on the surroundings in which the music is rendered.

Specification of acoustics: The region about the orchestra should have much of the power and brilliancy of the concert hall, but without that reverberation which, while perhaps pleasing to two ears, is undesirable in the case of monaural hearing. The problem, therefore, resolve itself into the production of a moderate amount of localized liveliness around the orchestra, and into a minimization of multi-reflected sound striking the microphone. An added requirement is sufficient diffusion of sound in the room, particularly about the orchestra, so as to avoid interference patterns at sustained passages and to gain a steady rate of decay of sound level, especially important for the higher frequencies which are more directive in character.

Studio sound control: Diffusion is most effectively secured by dispersive corrugations in the orchestra region, so that at once the directive cones of sound are split up. With properly oriented panels one can also secure a desirably directed efflux of sound from the more "live" end of the studio toward the microphones. Absorptive panels at reversed angles about the orchestra are desirable to avoid an increase of sound energy at the pick-up due to reflections which otherwise would strike the microphone with a distorting time-lag and with an undue reverberant effect. (The larger the ratio between totally reflected and direct sound at the microphone, the more does the listener gain an impression of "distance" in the sound-pattern.)

The rear wall—region of orchestra—should consist of splays, both to obtain "liveliness" and to avoid multiple echoes in the longitudinal direction of the studio. All splays and corrugations should be at least 4 feet wide and should project from the wall no less than 18 inches in order to be effective with the more common wave lengths of sound. If alternate hard and soft layers are used for the wall treatment, these layers should be staggered so that each absorbent layer will

face a reflective one across the studio, and vice versa. It is inadvisable to apply such a treatment on the rear wall, since the surface should always be kept as absorbent as possible.

Sometimes studios employ resonating panels to achieve proper acoustic conditions. Such panels must be handled adroitly, so as to avoid a tone-bias when several panels vibrate with the same fundamental frequency.

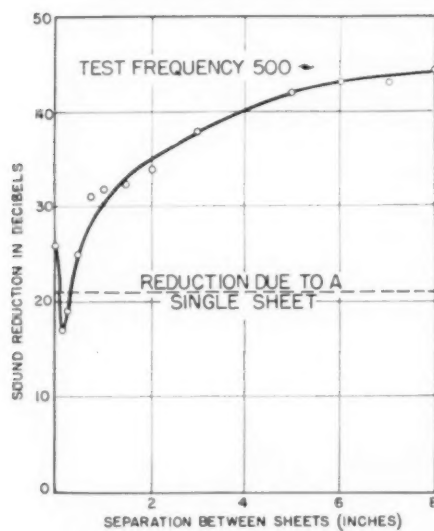
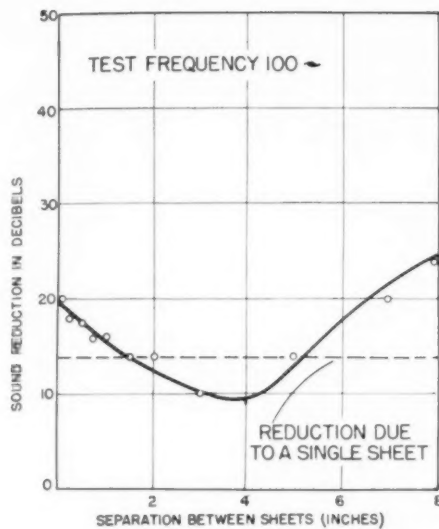
Typical studio plans: European opinion favors the ratio 1:2:3 for the height, width and length of the room. The National Broadcasting Company favors the ratio 2:3:5. This writer recommends a ratio of 1.3:2:3, which gives the American ceiling height and retains the European dimensions for width and length.

Figure 1: In this plan of a recording studio the reflective splays on the side-walls have a threefold significance. (1) If properly oriented, they provide a desirably directed efflux of the sound generated within this more live region in which the band is located. (2) Directive cones of high-frequency sounds are broken up, and there is a more uniform decay of sound in the room. (3) The over-all diffusion of the sound is increased because of the decrease in the mean free path given by $4V/S$, where V represents the volume and S the total surface in the room. This shorter mean free path means more reflections per second at any point in the room, since the number of reflections per second is given by $34,400S/4V$.

Figure 2: In this studio there is a live region about the orchestra, a moderately live region in the middle, and a dead region at the far end of the studio. Hence, there is no abrupt change in the reverberation time from live to dead end, which again brings about a more uniform decay of the sound in the room. The splays are necessary to avoid "flutter" in the longitudinal direction, as this dimension is usually more than the minimum distance of 35 feet required to produce an echo.

Figure 3: In this studio the orchestra is located in one corner. Such location is desirable when the orchestra consists of a large number of string instruments which otherwise could not be suitably arranged. Because of the large number of live splays in this room, the absorbent portions must be made very absorbent to bring the reverberation time down to a suitable value.

WINDOWS MADE PROOF AGAINST INTRUSION OF NOISE



The sound insulation values are given in terms of the decibel. For example, a window which transmits 1/10th of the sound which falls on it has a sound insulation of 10 decibels; if it transmits 1/100th, 20 decibels; 1/1000th, 30 decibels, and so on.

The sound insulation of single homogeneous partitions (e.g., a sheet of glass or a solid concrete wall) depends almost entirely on their weight per square foot. The nature of the material is of secondary importance, provided it does not contain holes or cracks. A window of 21 oz. glass will admit roughly 200 times as much sound as an equal area of a 4½" brick wall.

Double glazing: Double windows have been used for a long time to provide thermal insulation; they also, as a rule, represent an advance on a single window from the point of view of sound insulation. A badly designed double window, however, can afford actually less insulation than single glazing. Results published by Dr. J. E. R. Constable of the Physics Department of the National Physical Laboratory in England show that the sound insulation of double windows depends largely on the spacing of the components (*Philosophical Magazine*, 1934, Series 7, Vol. xviii, p. 321).

Spacing for insulation: Some of the test results are indicated in the charts which show the variation of sound insulation with different spacings for low and medium frequencies. The insulation afforded by a single sheet of the same glass is also shown for comparison. The insulation of two sheets in contact is equivalent to a sheet of double thickness, viz., 5 db. greater. As the spacing of the two sheets is increased, the stiffness of the air between the two sheets begins to play a part, and the insulation first decreases, passes through a minimum, and then increases continually. For example, at 100 cycles per second this minimum occurs at a spacing of 4 inches and windows having this spacing easily transmit low frequencies. The curves prove that two sheets can actually have less insulation, particularly at low frequencies, than a single sheet if the intervening distance is insufficient. Calculation shows that if heavier glass is used the minimum occurs at narrower spacing and the average insulation at any spacing is increased.

Treatment for sound absorption: The insulation of a double window can be increased by lining the jambs between the sheets with acoustic absorbent. In another paper (*Physical Society Proceedings*, 1936, London, Vol. 48, p. 690) Dr. Constable has calculated and measured the effect of the character of the jamb

surfaces exposed between the two panes. He showed that the more sound absorbent are these surfaces, the greater is the insulation provided by the window. For example, the insulation of a double window with bare brick wall between the components can be increased 8 db. by covering the surfaces with sound-absorbent felt. When it is recalled that a decrease in sound intensity by 10 db. corresponds to halving the loudness of a sound—a convenient figure to remember—it will be realized that this is an improvement well worth the very small extra cost. Lining the side walls with fiberboard (Celotex) gave an improvement of about 5 db.

Dissimilar components: A negative fact that is often stated in connection with the design of double windows is the recommendation to make the components of unequal thickness or to subdivide one of them. In a paper by Kreüger and Sager (*Proceedings, Royal Swedish Institute for Engineering Research*, No. 132, 1934) results of measurements upon a large number of windows are given and it is shown that there is no advantage in making the components dissimilar.

Recommendations:

(1) The spacing between the components of a double window should be as wide as possible. The full width of the wall should be used where possible. If 21 oz. glass is used, the spacing should be greater than 4 inches, otherwise the window will be useless against low-frequency sounds, such as the roar of street traffic. A proportionately smaller spacing may be used for heavier glass.

(2) The side walls between the components of a double window should be covered with sound-absorbent material such as acoustic felt or fiberboard.

(3) There is no need to render the components dissimilar by using glass of unequal weight or by subdividing the sheets of glass by glazing bars. The glazing bars, if used, should not be common to both sheets.

(4) Since soundproof windows only function as such when firmly closed, some form of artificial ventilation is a necessity. As windows are usually constructed to open so that their inner surfaces can be cleaned, it is important that they should be fitted with a latch having a wedge action to insure a tight closure against the rebate, which should be lined with a soft material such as rubber, felt or chamois leather.

The results of a recent study of window soundproofing, made by the National Physical Laboratory in England, are reported in the accompanying article by K. M. Constable.

CONTROL EQUIPMENT

concealed radiator for radiant heat

Introduced by American Radiator Company, 40 West 40 Street, New York, under trade name "Arco Radiant Convector," for use in conditioning systems.

The new unit is designed to retain all the advantages of the standard convector, including those of recessed or concealed radiators, space economy, accessibility for cleaning, and unobtrusive appearance. A live radiant heat panel of cast iron replaces the front section of a regular fin type convector heating unit so that this panel can be fitted flush to a specially prepared opening in the inclosure. Construction of the rest of the unit and of the inclosure is standard and the cast iron panel offers a uniform flat surface in the front of the inclosure. The plate is finished in a priming coat of gray and can be painted with the inclosure. Installation practice is the same as for the company's regular convector units.

balanced heating control

Introduced by C. A. Dunham Company, 450 East Ohio Street, Chicago.

A new adjustable regulating valve provides means of changing the size of the orifice without disconnecting the radiator. Used with the Dunham differential vacuum heating system, which circulates subatmospheric steam of varying temperatures, it permits balancing and regulating individual radiators. It is also adaptable to existing heating systems. After the valve is once installed the adjustments to secure correct balancing can be made without interruption to heating service.

air lock heating control

Developed by The Beaton and Corbin Mfg. Co., Southington, Conn.

This system is intended for one-pipe steam installations. An automatic venting valve, placed at the end of the radiator opposite the end where the steam comes in, regulates the amount of air which must be exhausted before the steam can enter. By means of a simple adjustment the valve can reduce the radiator capacity to about 60%.

all-in-one air conditioner

Manufactured by Airtemp, Inc., subsidiary of Chrysler Corporation.

The new unit has 3 horsepower capacity, but is so compact that all machinery, including compressor, motor, con-

denser and cooling coils are contained in one cabinet which covers only 20 by 33 inches of floor space. It is 7' 6" in height. Designed to sell at a comparatively low price, it is intended to put air conditioning within the reach of the small shop owner. Its semi-portability permits the merchant to take the unit with him from one building to another. Only simple electrical and water connections are required. The unit provides for overhead distribution and circulates 1,200 cubic feet of conditioned air per minute.

Installation: The unit can, if desired, be adapted to a duct installation to care for the conditioning of several individual rooms. There is also provision for bringing in outside air for ventilating purposes. It can be located behind partitions, nested in shelves, arranged along the wall or put back to back in the middle of the room, depending on the type of room. Multiple installation is made practicable with one or more units to handle outside air. Each unit works independently in the interests of flexibility and economy of operation. Single units may be used to supplement existing systems where addition of rooms or new departments necessitates additional cooling.

doorless telephone booth

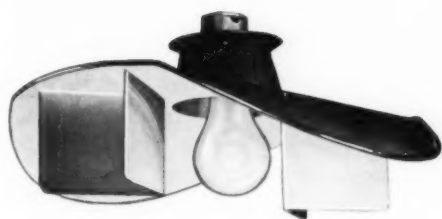
Developed by Burgess Battery Company, Acoustic Division, 111 West Monroe Street, Chicago. De luxe model styled by Alfonso Iannelli, architectural sculptor and product designer; supplements an industrial booth designed for use in subways, noisy mills and factories (see report, Technical News and Research, April, page 338).

The new booth is intended to harmonize with the furnishings of hotels, depots, drug and department stores. It is open around the base and requires no door. This feature facilitates natural ventilation and easy cleaning. Noises which enter the booth are instantly absorbed by the Burgess Acousti-Pad lining. Sounds from within can only be picked up by the telephone transmitter.

Specifications: The steel booth is furnished in three standard exterior colors—gray, mahogany brown, and flat white for any subsequent finishing by interior decorators. The interior wall finish is a warm cream color with white ceiling. The overall height is 85 inches; width 32 inches; depth 42½ inches. A concealed ceiling light is provided with pull chain socket. Two shelves are provided for holding the telephone instrument and directories.



doorless telephone booth



luminaire for vertical lighting

luminaire for vertical lighting

Announced by the Westinghouse Electric and Manufacturing Company. Intended for the illumination of book aisles, stock-room bins and stacks and wherever a distribution of light on a vertical plane is required.

The new bin and stack luminaire consists of a reflector and socket cover, with socket. The reflector is designed to direct more light to working plane. It has two triangular vanes located opposite each other to provide proper eye shields, or light cutoff, up and down the aisles between the bins. The sides of the reflector are slightly dipped to redirect light into the bins and cut off stray light that would otherwise be lost.

Specifications: 24-gauge Armco iron is covered with one ground coat of porcelain enamel all over, two white coats inside, one green coat outside and black head to provide the reflective power. The head is rolled tight and sealed in the enameling process. A 16-gauge steel outlet box cover, arranged to take a standard sign receptacle socket with nickel-plated interior and polarized screw terminals with cover, is attached to the reflector by two cadmium-plated screws with protecting washers. This cover is pierced and slotted for attachment to a 4" outlet box. It is finished in green baking enamel. The back connected sign receptacle allows for easy wiring and the nickel-plated interior eliminates lamp freezing. Standard 60, 75 or 100-watt inside frosted lamp can be used as desired.

improved duplex receptacle

Announced by The Bryant Electric Company, Bridgeport, Conn.

Separate feeds for each outlet permit separate control. One side can be wired for switch control and the other left always alive for ordinary use in connecting radio, vacuum cleaner, lamps, and so on. The entire body and back plate are heavy molded bakelite. Wide mounting ears made integral with the yoke permit level flush installation with plaster walls; they can be easily removed if not needed.

remote control power switch

Announced by Thomas A. Edison, Inc., under trade name "Polatrol."

This device, a polarized magnetic switch, is intended for the operation of street lamps and hot-water heaters. It utilizes the multiple street lighting circuits which

are replacing the old series circuits, and brings certain off-peak power loads within the control of the power station. Direct current pulses sent down a circuit composed only of the primary neutral and one of the main power wires will close or open the Polatrol, and put into operation either lighting circuits or water heaters fed from the secondary side. Each can be controlled independently.

Household application: Electric water heaters with 30-gallon tank capacity may be installed to take advantage of the special low off-peak power rates. Such heaters in the past have been controlled by clocks and have required 80-gallon storage tanks.

low-cost panelboard

Announced by the Westinghouse Electric and Manufacturing Company.

This new Nofuze panelboard is designed for application in industrial plants, schools, hotels and all types of commercial structures. Because it uses the multi-breaker unit recently developed for load centers (see *Technical News and Research* section, September issue, page 241), the cost is only slightly higher than for conventional switch and fuse type panelboard.

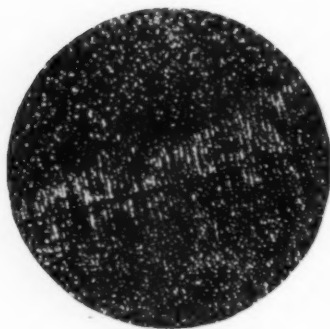
Specifications: The panelboard is designed for 115, 115/230 volt a-c service in a range of 4 to 40 circuits in 2-circuit steps. Bus arrangements for single-phase, 3/2 wire, and 3-phase 4-wire services are provided. Branch circuit ratings of 15, 20, 25, 35 and 50 amperes are available. The multi-breaker units employed permit a compact design, the box dimensions being held to 15" wide by 4" deep, permitting mounting in spaces where other panels could not be used.

neon indicator fuse

Manufactured by Indicator Corporation, 32-36 Green Street, Newark, N. J., and marketed under the trade name "Indicator 6 Fuse." Cost equivalent to 6 ordinary fuses.

When an overload occurs on the line, the fuse blows like any other fuse, but a tiny red neon tube flashes through an opening in the molded plastic top. A slight turn of the knob to the right engages a new fuse link; the neon lamp ceases to glow and the trouble is rectified. There are 6 fuse links, so the device remains in the socket until used 6 separate times. A short circuit or permanent overload is quickly detected by the neon lamp glowing again after the knob has been turned.

BUILDING MATERIALS



ordinary galvanized sheet



"Armco Galvanized Paintgrip"
(40 diameter microphotographs)

paint-gripping metal sheets

Produced by The American Rolling Mill Company, Middletown, Ohio, and marketed under the trade name "Armco Galvanized Paintgrip." Introduction of the sheets follows several years of research on the part of Armco's metallurgists and the technicians of the Parker Rust-Proof Company.

This new kind of galvanized sheet metal can be painted without special treatment of the surface by the user. In the past zinc-coated sheets have been prepared for painting by roughening the surface either by etching with acid or chemicals or by weathering. However, this practice has not proved satisfactory, because it is the tendency of certain zinc compounds to dry up the elastic constituents which are essential to the life of paints and lacquers. As the elasticity disappears, the paint becomes brittle and shows a tendency to crack and peel as expansion and contraction occur with temperature changes. The new sheets are chemically treated to produce a finely crystalline phosphate coating which in itself is neutral to paint (being neither acid nor alkaline) and keeps the paint from direct contact with the zinc surface. This coating is an integral part of the sheet and is slightly granular in nature.

flexible planks of wood veneer

Developed by The Celotex Corporation, 919 N. Michigan Avenue, Chicago, and marketed as an interior finish under the trade name "C-X Texbord."

The planks are made by applying cabinet wood veneers of walnut, mahogany and avodire to a Celotex base only $\frac{1}{4}$ " thick. Each unit is an individual plank with a grain and figure different from that of every other.

Flexibility: This new wood finish can be used for both old and new construction. In modernization it permits economical application because it can be applied directly over plastered walls and because it does not make necessary the removal of baseboards, moldings and casings at doors and windows. The planks are flexible enough to conform to the wall surfaces and permit bending around archways and moderate curves.

Application: C-X Texbord comes in units 6", 9", 12" wide, and 8' and 10' long. The planks have beveled edge shiplapped joints. All attachment to the wall is made under the shiplap joint so that no nailheads are apparent and there are no nail holes to be plugged by finishers. The

completed installation appears to be of solid wood grooved in plank formation. The usual necessity for batten strips is entirely eliminated.

moisture-protected sheathing

Developed by The Celotex Corporation, Chicago, and marketed under the trade name "Celotex Vaporseal Insulating Sheathing."

This new material has the same intrinsic characteristics as the regular Celotex, being integrally waterproofed and treated against termites and dry rot by the special Ferox process and offering the insulation value common to Celotex. An asphalt coating protects the Celotex against conditions of excessive moisture without reducing the insulation value; at the same time it increases its structural strength. A bright aluminum coating on one side offers an additional vaporseal.

siding clapboard of asbestos

Developed by Johns-Manville, 22 East 40th Street, New York, and marketed under trade name "J-M Asbestos Clapboard."

This new clapboard is a companion product to the "J-M Cedargrain Asbestos Siding Shingles" which have been on the market for the past four years. The clapboard is made of the same materials as the shingles—*asbestos* and *portland cement*—and has the same inherent qualities of permanence, fireproofness and ease of maintenance. Its surface texture, however, is different and it has a white color. It measures $9\frac{1}{2}$ inches wide, 8 feet long and $\frac{3}{16}$ -inch thick, and is designed for an exposure of 8 inches.

termite-resisting lumber

Developed by the California Redwood Association and marketed under trade name "Foundation Redwood."

This new official grade of Redwood is designed to be highly resistant to decay and termite attack, and to insure durability under severe conditions of use. According to the Association's standard specifications: "In brief, it provides for lumber specially selected for resistance from the grade of No. 1 Heart Common, which in itself is a grade selected for resistance to decay and termite attack. Foundation Redwood not only must be specially selected and graded, but the grading must be performed under the supervision of official Association inspectors, and it must be grade-marked with the grade mark of the Association."

for removing
seepage water

PENBERTHY
PRODUCTS

PENBERTHY AUTOMATIC
CELLAR DRAINER
(Water or Steam operated)
Made in 6 sizes

PENBERTHY AUTOMATIC
ELECTRIC SUMP PUMP
Made in 6 sizes

*Copper and Bronze
Throughout*

Sales Active

THE sales record established by these
Penberthy Products is probably the
best evidence of their outstanding quality.

Architects, engineers, plumbing and heating contrac-
tors... all have expressed a preference for a Penberthy
Automatic Electric Sump Pump or Automatic Cellar Drainer
wherever seepage water accumulates. The many advantages
and economies of hot water heating plant modernization with
these Penberthy Specialties are also appreciated.

Jobbers everywhere carry Penberthy Products in stock.

for modernizing
hot water heating
systems

PENBERTHY PRESSURE AND
RELIEF CONTROL
Made in 2 Models

PENBERTHY WATER CIRCULATOR
Made in 3 sizes

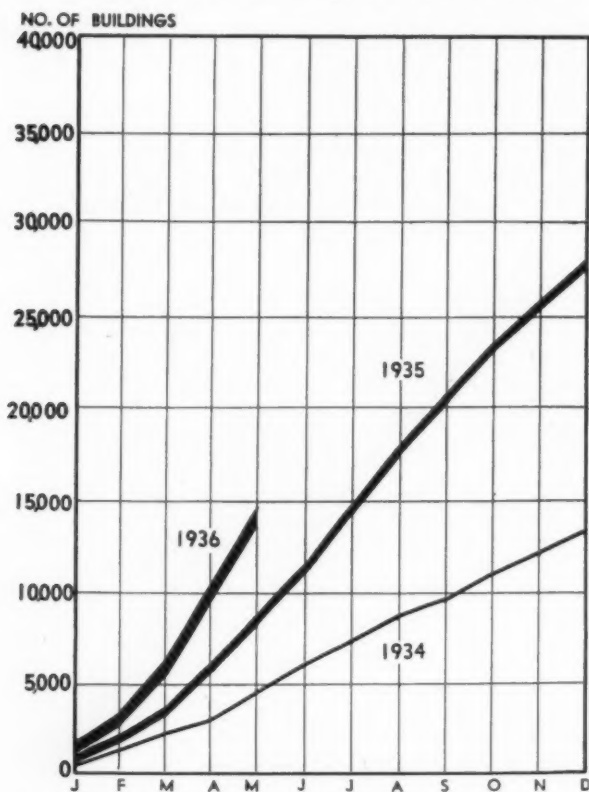
*Constructed of
High Grade Steam Bronze*

PENBERTHY INJECTOR COMPANY

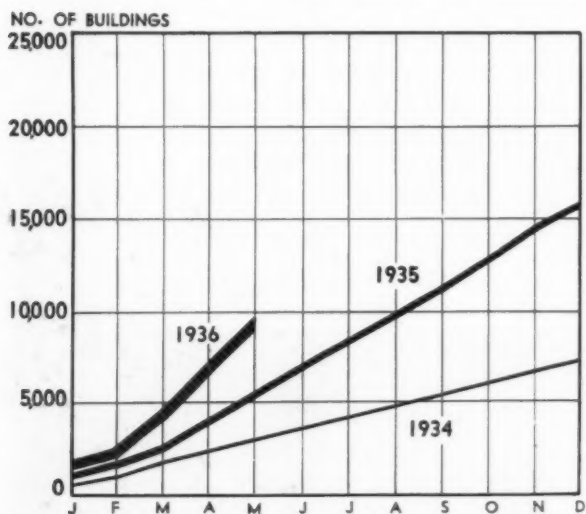
Manufacturers of QUALITY PRODUCTS Since 1886
DETROIT, MICHIGAN • Canadian Plant, Windsor, Ont.

THE RISE OF THE ONE-FAMILY HOUSE

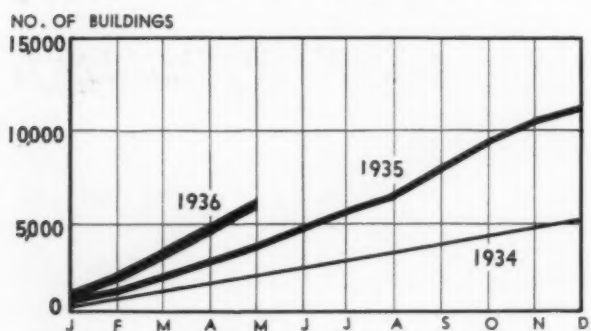
Contracts let for new dwellings in 37 eastern states



A. Dwellings erected by individuals for their own occupancy.



B. Dwellings erected by development building companies in quantities of two or more, for speculative sale.



C. Dwellings erected singly, for sale or rent.

PROGRESS OF THE ONE-FAMILY HOUSE

By L. SETH SCHNITMAN, Chief Statistician,

F. W. Dodge Corporation

The one-family house has characterized the American housing mode for generations. Inroads on this habit have been made by multiple-family types but even now the single-family dwelling, taking the nation as a whole, continues as by far the more important classification.

Last year the single-family house accounted for about 76 per cent of the total expenditures for the erection of new housing units. The ratio for 1935 becomes the more important when considered from the standpoint that it represents a total of some 55,000 new houses in the amount of almost \$320,000,000 for the 37 states east of the Rocky Mountains.

Current records on new residential building indicate that last year's proportion for the one-family house has been slightly bettered during the first five months of 1936; nor is there now any reason to believe that for the full year 1936 any material lowering in the ratio under current levels will be registered.

Single-family house construction falls into three rather distinct categories, as shown in the accompanying charts:

- Those dwellings erected by individuals for their own occupancy.
- Those constructed by the so-called speculative home-building companies who erect two or more dwellings at one time.
- Those which are erected by individuals, usually small mason or carpenter builders, who build one house at a time for speculative sale or rent.

Just about half the number of new single-family houses started in 1935 was for owner occupancy while, on a valuation basis, this class of operation accounted for 55 per cent of all one-family house expenditures. During the initial five months of 1936 owner occupancy single-family houses accounted for only 46 per cent of the total number of all one-family dwellings and about 53 per cent of the total valuation.

Almost 29 per cent of all one-family dwellings erected during 1935 were built by operative home-builders, but these accounted for only about 22 per cent of the total valuation of all single-family house construction during the year. For the first five months of 1936 the development type dwelling classification represented about 31 per cent of the total number of new one-family houses and about 24 per cent of the total on the basis of valuation.

The remaining major class of one-family house building operations, i.e., houses erected chiefly by small mason or carpenter builders for speculative sale or rent, in 1935

3 1/3 TIMES LESS AIR LEAKAGE . . .

Meets AIR-CONDITIONING Needs

Andersen WOOD Casement

ANDERSEN Casements are designed to meet the exacting requirements of modern, air conditioned homes . . . minimum air leakage and heat radiation, freedom from condensation or frosting.

Removable double glazing reduces heat loss through glass 60% and controls condensation. Air leakage is stopped by spring bronze weatherstrips of exceptional efficiency and special leakproof frame construction.



ANDERSEN Units overcome objections heretofore found with both wood and metal casements.

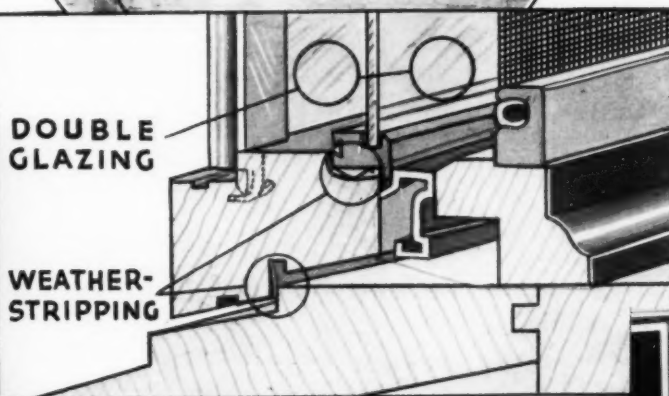
All wood parts are protected against decay, termites and moisture with Andersen-Bruce Preservative Treatment.

Infiltration tests at the University of Wisconsin show an air leakage of *only* 4.6 cu. ft. per hour per foot of sash perimeter with a wind velocity of 15 m.p.h., as compared with 15.5 cu. ft. for the average weather-stripped double-hung window.



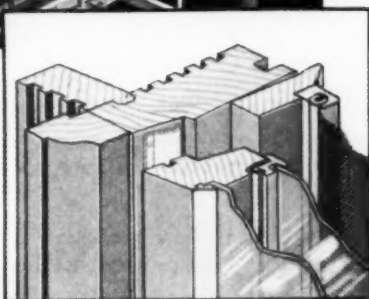
DOUBLE GLAZING

WEATHER-STRIPPING



See the Andersen Catalogue of Complete Window Units in SWEETS Section 11-14

Andersen Casement Unit
Narroline Double-Hung Unit
Andersen Basement Unit



These illustrations highlight the superior Andersen construction and greater conveniences offered by Andersen Casements. Removable Double Glazing. Efficient weather-stripping. Inside aluminum screen. Under-screen operator. Extension hinges for easy washing.



MASTER FRAMES

Leakproof locked sill joint. Steep sill slope with blind stop chamfer for complete drainage. Weather-tight, wide blind stop and insulated mullion. Noiseless pulleys. Factory primed joints. Save time and money by specifying Master Frames.

NARROLINE WINDOW

A Double-Hung Unit with modern mullions and trim, completely weatherstripped and ideal for air conditioned homes. Time tested counterbalancing method of sash operation. Andersen-Bruce treated against decay, termites and moisture.

USE THIS CONVENIENT COUPON

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Bayport, Minnesota

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Please send complete details on:

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| <input type="checkbox"/> Andersen Master Frame | <input type="checkbox"/> Andersen Narroline Unit |
| <input type="checkbox"/> Andersen Casement Unit | <input type="checkbox"/> Andersen Basement Unit |

NOTE: See your dealer for a demonstration with working models on any Andersen product—or write us.

accounted for about 21 per cent of the total number of new single-family dwellings and about 23 per cent of the total, on a valuation basis. For the initial five months of the current year this type of building operation represented about 23 per cent of all new one-family houses in both number and valuation.

On a total volume of one-family house building operations that is now substantially larger than it was a year earlier, the houses built for speculative sale or rent, taking both development and mason or carpenter-builder classes together, have become somewhat more important in number than the owner-occupancy classification. On a valuation basis, however, this latter category still accounts for more than half the total expenditures.

The average value of the owner-occupancy house is considerably higher than the average value of either the development type or of the remaining class built for sale or rental

purposes. The average value of the development type is much lower than the value for any other class of one-family house.

Stiffening rental scales and improving incomes are operating to awaken renewed interest in home-ownership. As general business improvement expands, further gains in the construction of one-family houses will be recorded. Numerical increases will probably be greater on the speculative side than in the owner-built classification. Because of recent selling successes many additional speculative building operations are now being projected by operative builders. The whole process is one largely of contagion, purely localized improvement gradually giving way to the general.

Multiple-family housing types, now only showing symptoms, should rather soon take on all of the characteristics evident in the small-house field, if the much heralded current recovery in the residential world is really genuinely founded.

RESIDENTIAL BUILDING OPERATIONS: 1925-1935

37 eastern states

| YEAR | TOTAL RESIDENTIAL BUILDING | ONE- AND TWO-FAMILY HOUSES | | APARTMENTS AND HOTELS | |
|-------|----------------------------------|----------------------------|------------|--------------------------|------------|
| | Millions | Millions | % to total | Millions | % to total |
| 1925 | \$2,748 | \$1,295 | 47.1 | \$1,453 | 52.9 |
| 1926 | 2,671 | 1,199 | 44.9 | 1,472 | 55.1 |
| 1927 | 2,573 | 1,226 | 47.7 | 1,347 | 52.3 |
| 1928 | 2,788 | 1,409 | 50.5 | 1,379 | 49.5 |
| 1929 | 1,916 | 1,081 | 56.4 | 835 | 43.6 |
| 1930 | 1,101 | 708 | 64.3 | 393 | 35.7 |
| 1931 | 811 | 574 | 70.8 | 237 | 29.2 |
| 1932 | 280 | 233 | 83.2 | 47 | 16.8 |
| 1933 | 249 | 185 | 75.4 | 64 | 24.6 |
| 1934 | 249 | 185 | 75.4 | 64 | 24.6 |
| 1935 | 479 | 361 | 75.4 | 118 | 24.6 |
| 1936* | 261 | 205 | 78.5 | 56 | 21.5 |

Note: All data above include both new and alteration projects. *Data cover first five months only.

It is of interest to note the following facts from the above table:

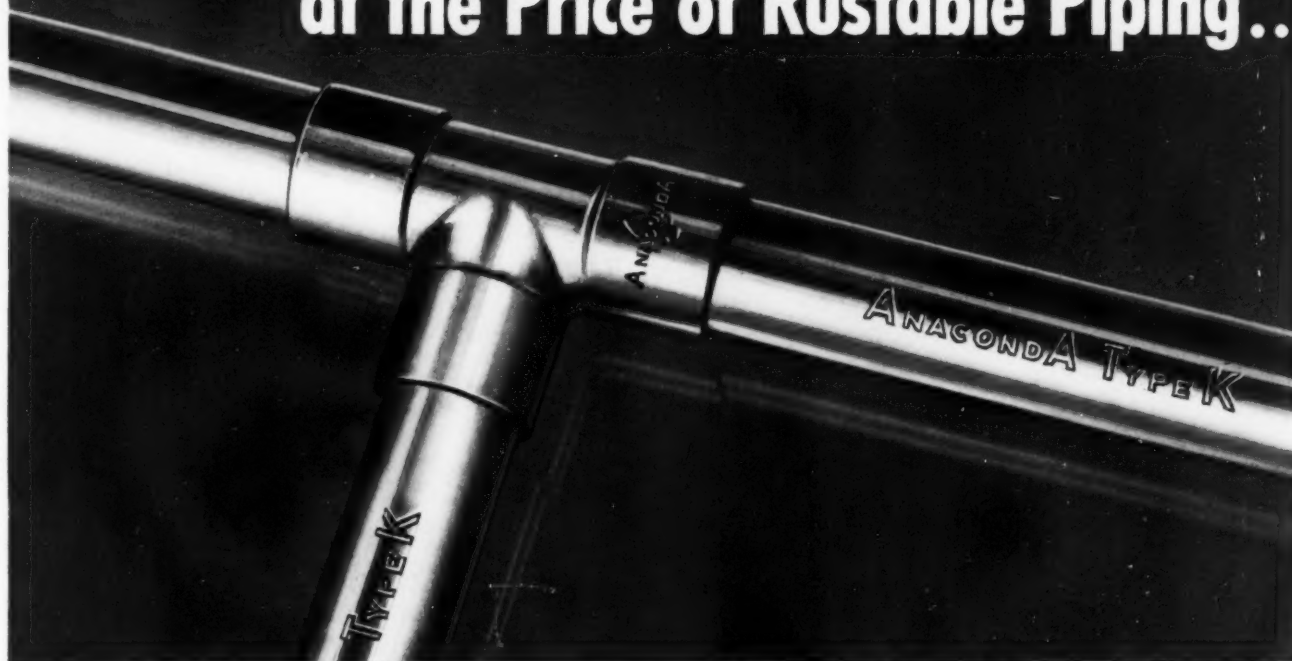
1. Expenditures for one- and two-family houses in the 37 eastern states in the years 1925 through 1927 were less than half of the total for all residential building expenditures, the remaining being in apartments and hotels.
2. Except for 1926 the proportion of expenditures for one- and two-family houses rose continuously from 1925 through 1932 and vice versa expenditures for apartments and hotels during the same period showed a declining proportion to the total residential volume.
3. For the three-year period 1933-1935, inclusive, the distribution between the small house and the multiple-family type was stationary at a ratio of about 75 to 25 in favor of the one- and two-family dwelling.
4. In the initial five months of 1936 the small house ratio rose at the expense of the multiple-family type.

5. The quantitative peak in the small house field occurred in 1928 while the peak in the apartment and hotel classification was reached in 1926.

On this array it is probably safe to conclude that if there is any timidity in the current residential building situation it centers largely in the investment types such as apartment houses and hotels.

New money has been very slow to flow into these channels even though eight years of a virtually continuous decline in construction has occurred in the interim since the peak of 1926. Whether a broad reversal nears is difficult to determine, but the fact that a quantitative gain in volume occurred in 1935 over the previous year affords a basis for believing that better times are ahead for investment housing types. This is the case if due regard is given to the mounting pressure from accumulating moneys in the hands of life insurance companies and savings banks which, in the past, were important factors on the financial side of investment building operations.

Now...a Copper Tube Installation at the Price of Rustable Piping..



for plumbing, heating and air-conditioning lines

IN specifying for plumbing, heating and air-conditioning lines, the first cost of non-rust material can no longer be considered a drawback to its use. For the price of Anaconda Copper Tubes, assembled with Anaconda Solder-Type Fittings, is little or no more than that of pipe that rusts.

In addition to low cost, this sturdy tubing offers all the traditional advantages of copper—long life . . . trouble-free service . . . immunity to rust . . . freedom from periodic repair expense.

Copper tubes for heating lines

For heating lines . . . Anaconda Copper Tubes are ideal. Hot water conveyed through them loses only about *one-half* as much heat as is lost when black iron is used. Permanently smooth interiors reduce

resistance to the flow. The result is quicker circulation and maximum efficiency.

A complete line of Anaconda Fittings

There is an Anaconda Fitting to meet *every* copper tube requirement. Solder-type fittings may be had in either wrought copper or cast bronze; flared-tube-type fittings are cast bronze. All are furnished in elbows, tees, couplings and unions, including a complete range of reduction and adapter combinations. Anaconda Copper Tubes and Fittings are carried in stock by distributors of Anaconda Pipe.



Where standard-size, rigid pipe is required, Anaconda Brass Pipe has long been the standard of quality. Two scientifically-determined alloys are carried in stock by leading supply houses . . . *Anaconda 67 Brass Pipe* for normally corrosive water, and *Anaconda 85 Red-Brass Pipe* for highly corrosive water.

3645



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New Type Casein Paint Gives Enduring Beauty at LOW COST

Texolite Paint

● Because we are leading manufacturers of interior finishes* it is fitting that we undertook the task of producing an ideal paint—the final note to accent the beauty of, and give longer life to, modern interiors.

Our special knowledge of the relationship of paint to the composition of the materials of interior finishes plus our exhaustive laboratory work and field tests permits us to say—*Texolite does more for the money than any other type of paint will do.*

For 12 years we have manufactured and experimented with casein paint. Texolite is the successful result of our experimentation. Texolite is an entirely new principle paint. Its advent marks a new conception of paint beauty, paint value, and paint performance.

TEXOLITE HAS THESE ADVANTAGES

1. Hides in one coat . . . 2. Dries in one hour . . . 3. Goes 25 per cent farther . . . 4. Leaves no brush marks . . . 5. No paint odors . . . 6. Does not yellow . . . 7. One gallon makes one and one-half gallons of ready-to-use paint.

TRY TEXOLITE AT OUR EXPENSE

Builders and owners everywhere are enthusiastic about Texolite advantages—its beautiful colors, its economy. Mail coupon today. We will send you complete information and a FULL QUART OF TEXOLITE absolutely FREE.



UNITED STATES GYPSUM COMPANY
300 West Adams Street, Chicago, Illinois

AR-7

Please send me a sample full quart can of Texolite Paint, together with a sample of Texolite Deep Color and handy Color Guide.

My Name _____

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*INTERIOR FINISHES MANUFACTURED BY UNITED STATES GYPSUM COMPANY

Red Top Plasters
Red Top Plaster Finishes
USG Finishing Limes
Sheetrock, the Fireproof Wallboard

Weatherwood Insulating Board
Weatherwood Hardboards
USG Fiber Wallboards
USG Acoustical Tiles

UNITED STATES GYPSUM COMPANY

NEW BOOKLETS & BULLETINS

In writing to manufacturers for any of the new catalogs or booklets listed in this column, mention of **The Architectural Record** will be greatly appreciated.

STRUCTURAL MATERIALS AND PARTS

Gypsteel Plank and Other Gypsteel Products. American Cyanamid & Chemical Corporation, Structural Gypsum Division, 30 Rockefeller Plaza, New York.*

Gypsum Lath. Gypsum Association, 211 West Wacker Drive, Chicago, Ill.

K-CMO (Lime-Locking) Primer. United States Gypsum Company, 300 West Adams Street, Chicago, Ill.*

Plating and Polishing Equipment and Supplies. The Udylyte Company, 1651 East Grand Boulevard, Detroit, Mich.

A Portfolio of Distinctive Entrances. Ellison Bronze Company, Inc., Jamestown, N. Y.*

Metal Lath for Homes, Plastering for Beauty, Steel for Strength. Metal Lath Manufacturers Association, Room 631, 208 South La Salle Street, Chicago, Ill.

Longer Life for Old Roofs. The Barber Asphalt Company, 1600 Arch Street, Philadelphia, Pa.*

The Howard Safety Window. Howard Safety Window Co., 2101 W. Purdue Street, Milwaukee, Wis.

Solus Oil and Gasoline Separator. The Central Foundry Company, 420 Lexington Avenue, New York.

PAINTS AND FINISHES

Chromated Zinc Chloride, An Improved Wood Preservative. The Grasselli Chemical Co., Inc., 629 Euclid Avenue, Cleveland, Ohio.*

One Coat, Non-Yellowing White Enamel—Liquid-Lite. . . Complete Specifications and Color Cards for O'Brien Paints. O'Brien Varnish Company, South Bend, Indiana.*

LIGHTING

What Every Service Station Operator Should Know About Lighting. Benjamin Electric Mfg. Company, Des Plaines, Ill.

Luminous Buildings for "Streamlined" Selling. Luminous Buildings Co., Terminal Tower, Cleveland, Ohio.

HEATING, VENTILATING, AND AIR CONDITIONING

Baker Air Conditioning for Commercial and Residential Applications. Baker Ice Machine Co., Inc., 1529 Evans Street, Omaha, Neb.

Heating and Air Conditioning for the Modern Home. The Trane Company, La Crosse, Wis.

Bryant Silica-Gel Dehumidifier for Indoor Atmospheric Control, Engineering Bulletin No. 281-C. The Bryant Heater Company, 17825 St. Clair Avenue, Cleveland, Ohio.

Young Streamaire Convectors, Unit Heaters, Blast Heaters, Heat Transfer Surfaces, Unit Coolers. Young Radiator Company, Racine, Wis.*

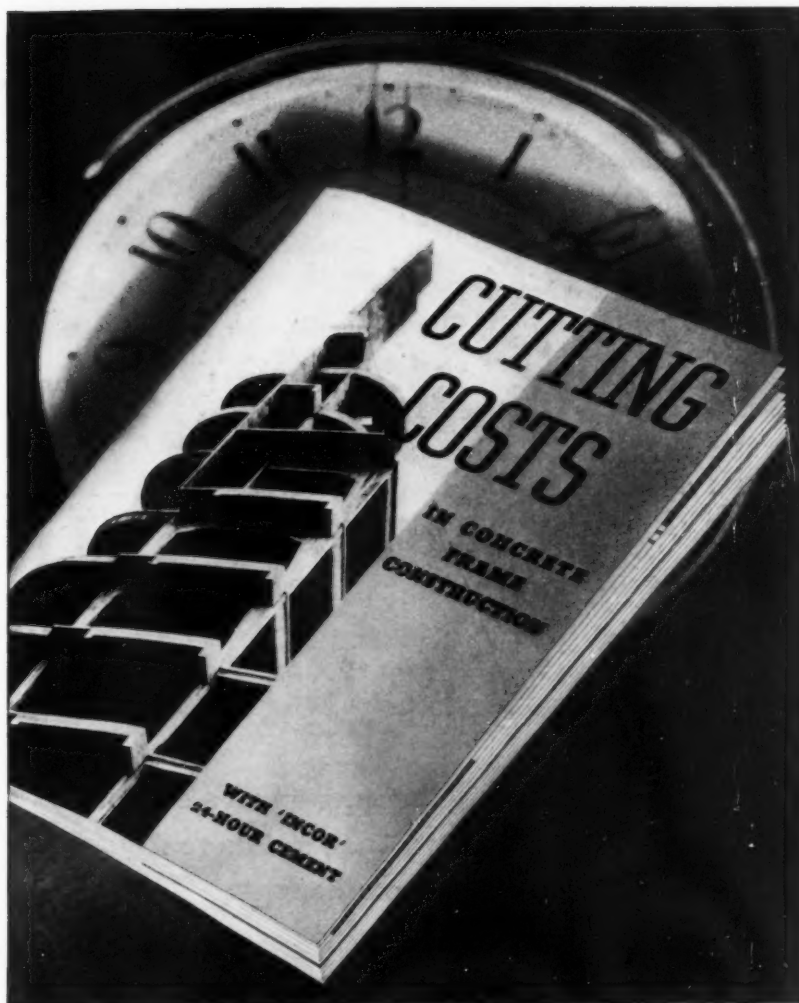
Gorton Single Pipe Vapor Heating System, Bulletin No. 102. Gorton Heating Corporation, Cranford, N. J.

Basmor Gas-Fired Boilers. . . De Luxe "D I Series" Oil-Burning Boiler. . . Radiators with Invisible Shields. . . Sectional Boiler. Crane Co., 836 S. Michigan Avenue, Chicago, Ill.*

Type "R" Round and Square Boilers for Heating Homes with Oil or Gas, Circular 93. Kewanee Boiler Corporation, Kewanee, Ill.*

National Premier Oil-Fired Vertical Steel Boiler. National Radiator Corporation, Johnstown, Pa.

Automatic Heat by the Anchor Kolstoker Anthracite Model, Bulletin 536. Anchor Stove and Range Co., Inc., New Albany, Ind.
(Turn to page 33 adv.)



TIME — THE COSTLY "FOURTH DIMENSION"

Concrete-frame erection is usually considered a "three-dimensional" problem—so many cubic yards of concrete at so much a yard for labor and materials. But here, too, there is a Fourth Dimension—Time. Forms are built, set and filled with concrete. Then, for a week or longer, the job stands still—waiting for the concrete to become self-supporting, so the forms can be stripped, re-assembled and used for the next floor. Thus, if it takes 81 working days to erect the frame of a 6-story building, 39 of them are non-productive—"dead" days when the contractor's fixed overhead expenses run on just the same, adding to the structure's cost.

This costly non-productive time is saved by using 'Incor,'* the improved Portland cement, which is self-supporting in 24 hours—permitting continuous construction progress, at a substantial expense saving. Suggesting that contractors be encouraged to estimate under specifications which take full advantage of 'Incor's' dependable high early strength. For simple method of calculating these savings, write for free copy of new, illustrated book, "Cutting Construction Costs"—address Lone Star Cement Corporation (subsidiary of International Cement Corporation), Room 2210, 342 Madison Avenue, New York.

*Reg. U. S. Pat. Off.

'INCOR' 24-HOUR CEMENT

NEWS OF THE FIELD

A CORRECTION: The architect's drawings showing the elevation and the first and second floor plans which appeared in the full-page American Telephone and Telegraph Company advertisement on page 45 of our June 1935, issue, were designed by Mr. Edwin Maxwell Loye of Bronxville, N. Y., and are his property. These plans are protected by copyright and must not be used without securing permission from Mr. Loye.

Mills, Rhines, Bellman & Nordhoff, Inc., architects and engineers, announce the removal of their offices to the fourth floor of the Manhattan Building, 518 Jefferson Avenue, Toledo, Ohio.

The new address of Cass Gilbert, Inc., architects, is 41 East 42nd Street, New York City. Members of the firm are Cass Gilbert, Jr., Joseph T. Mohn, Zenas N. Matteossian, Frank Logan, Livingston Longfellow, John Rannells.

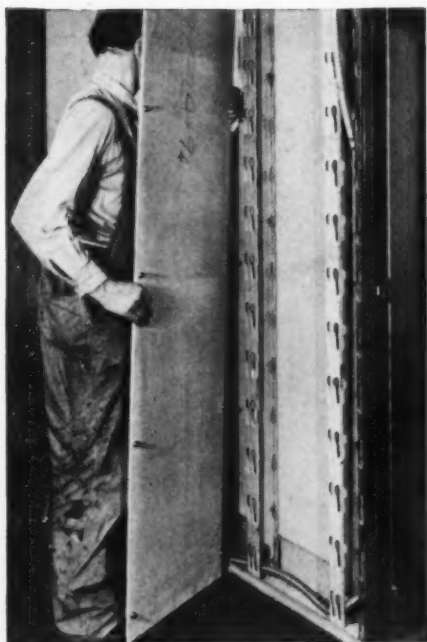
Rex D. Read is secretary and treasurer.

Wilbur Henry Adams, industrial designer, 2341 Carnegie Avenue, Cleveland, Ohio, announces that Charles H. Stark, architect, is now associated with him for the practice of general architecture.

M. Martin Elkind, architect, has opened an office at 40-09 82nd Street, Jackson Heights, Long Island, N. Y.

NOW... PERMANENT WALLS that can be MOVED!

IN TRANSITE WALLS, Johns-Manville offers a movable office partition that is inherently and structurally permanent.



Transite Wall Panel units are small, easily handled. Permit quick erection and relocation. Note easy access to wiring system. Also completely dry construction, eliminating all dampness and dirt.

TRANSITE—an asbestos-cement product—has a 25-year service record of extreme ruggedness and high fire resistance, earned under the most widely varied and exacting industrial conditions.

Now, in office partitioning, Transite's permanence and the concealed steel channels used in its erection both combine in providing all the safety, solidity and privacy of fixed walls. Yet, relocation, when desired, is rapidly accomplished—with 100% salvage value! Ingenious holding devices, also concealed, assure swift, foolproof erection or disassembly with minimum disturbance, dirt and cost.

Furthermore, the decorative possibilities of Transite Walls are infinite. They lend themselves to any type of finish, to any space or service condition.

You will be interested in our Transite Wall brochure, describing in complete detail the advantages of this remarkable partition which enable it to meet all present-day office requirements. For a copy, address Johns-Manville, 22 East 40th Street, New York City.

The General Electric Company has completed arrangements with the Auditorium Conditioning Corporation whereby it is privileged to use the various patents controlled by the Auditorium Conditioning Corporation.

Metal Products Exhibits, Inc., International Building, Rockefeller Center, New York, announces the opening of a special metal finishing room. Nearly all types of finishes on metal are on display. These include gold, silver, chromium, rhodium, cadmium, and bright nickel plating; plating on plastics and on glass; porcelain enamel; lacquers and specialty finishes; sprayed metal; polishing; aluminum coloring; vapor coating; galvanizing. This exhibit is open from ten to six daily, except Sunday—admission free.

General Houses, Inc., announces the removal of its general offices to the Decorative Arts Building, 620 North Michigan Avenue, Chicago. The new quarters occupy the entire fourth floor of the building.

The United States Gypsum Company, which has exclusive rights as selling agent to the building industry of fibrous glass produced by the Owens-Illinois Glass Company for insulation of homes, announces completion of similar arrangements with the Corning Glass Works.

Standard specifications of the New York Building Congress are available and may be ordered from the office of the Congress, 101 Park Ave., New York, N. Y. The subjects are listed below, the number in parenthesis after each subject being the number of pages in each case. Prices are two cents a page, subject to a discount of 10% when 25 or more copies of any

(Turn to page 35 adv.)



Johns-Manville TRANSITE WALLS

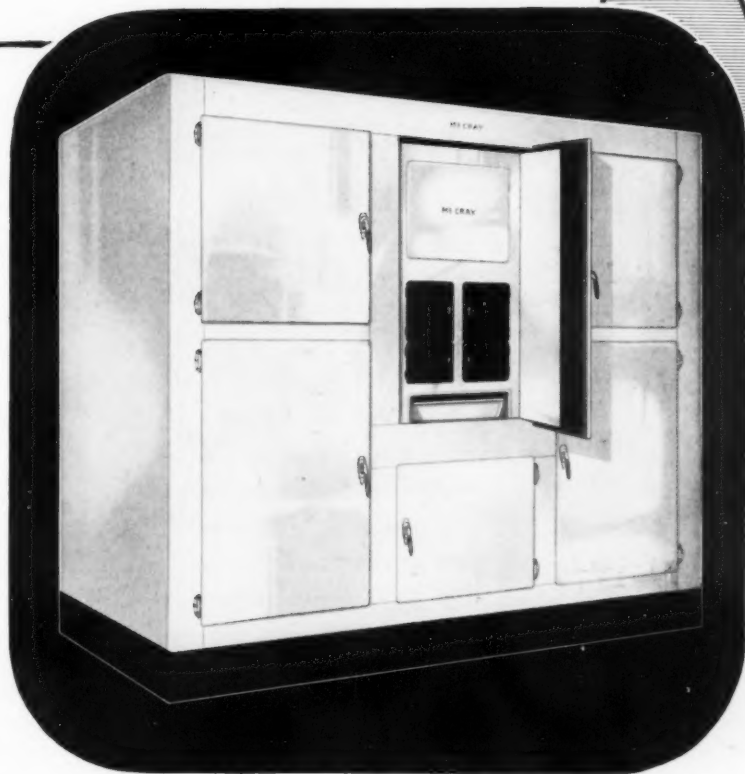
What
CUSTOM BUILT REFRIGERATION
by McCray
MEANS TO THE ARCHITECT

AS AN architect you make plans to meet specific purposes. Above all else you appreciate "rightness" in design, fitness in materials for a particular need—whether in the structure itself or the equipment which goes into it.

Consider, then, the value of *complete* refrigeration—compressor, coils and cabinet—designed for use together, exactly engineered and custom built to the highest standards of craftsmanship.

This is the service offered by McCray—out of nearly a half century's experience and leadership in refrigerator design and manufacture. For homes, clubs, hotels, institutions and every commercial purpose complete refrigeration by McCray is available, in both stock and built-to-order models.

Let us help you with your refrigeration problem. Our engineers will gladly submit specifications of installations to meet your needs, without obligation. Simply send sketch of floor plan and description of use.



Typical of McCray quality this handsome refrigerator affords the plus value in efficiency and economy which comes from McCray exact engineering and custom built craftsmanship.

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McCray REFRIGERATOR SALES CORPORATION
 690 McCray COURT, KENDALLVILLE, INDIANA
Salesrooms in All Principal Cities, See Telephone Directory

Complete Refrigeration
• for all purposes •



*Tea House, Dutchess Co., N. Y. Cabot's Stains
on roof (green) and walls (gray).
Architect, Roswell F. Barratt*

The House that Blends with the Landscape . . .

THE soft, transparent colors of Cabot's Stains have helped many an architect build houses that blend naturally with the landscape. Cabot's Bleaching Oil and Weathering Gray Stains take away the fresh, raw look of new shingles and give, almost overnight, pleasant weather beaten effects that formerly took years to attain. . . . Cabot's Creosote Shingle Stains have a vehicle of pure creosote—the best wood preservative known. They assure beauty, from the beginning, and low upkeep costs for generations. For color card and complete information, mail coupon below.

Cabot's CREOSOTE SHINGLE Stains

Samuel Cabot
Inc.
Manufacturing Chemists

SAMUEL CABOT, INC.
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Please send me color card and full information about Cabot's Creosote Shingle Stains.

Name

Address

AR-7-36

NEWS of the BUILDING INDUSTRY

"Kelvinator packages" for homes

Kelvinator Corporation has launched a program for building and selling electrically equipped and air conditioned homes that will be within the reach of families of moderate income.

According to *Business Week*, 11 houses, priced to sell within the \$6,000—\$7,000 range, including the lot, have been built in the Detroit district, where the company is working with local architects, builders, and real estate men. Each house is equipped with a "Kelvinator Package," consisting of boiler burner unit to heat the house, air conditioner, condensing unit for cooling the air, comfort damper system for night cooling, duct system for proper distribution of heat in winter and of cool air in summer, awnings at west side of house, six-cubic-foot Kelvinator refrigerator, and Kelvinator electric range.

Each house differs in appearance so that no two in a row look alike. They are designed to get most efficient use of air conditioning equipment. Walls have 3½ inches of rock wool insulation and the roof 4 inches. Windows and doors are weather-stripped.

refrigeration and nutrition

A brochure, "Scientific Refrigeration in Relation to Nutrition and Health," by Lulu G. Graves, consultant in nutrition, has just been published by The Temperature Research Foundation of Kelvinator Corporation, 420 Lexington Avenue, New York. Copies may be obtained upon request.

window-ventilating fans

Two new low-priced adjustable window-ventilating fans employing newly designed quiet-operating blades, one an 8-inch and the other a 10-inch type, are announced by the General Electric Company, Bridgeport, Conn. They are finished in cream enamel with nickel trim. The 8-inch fan lists at \$6.50, the 10-inch fan at \$9.95.

low-priced Alzak aluminum floodlights

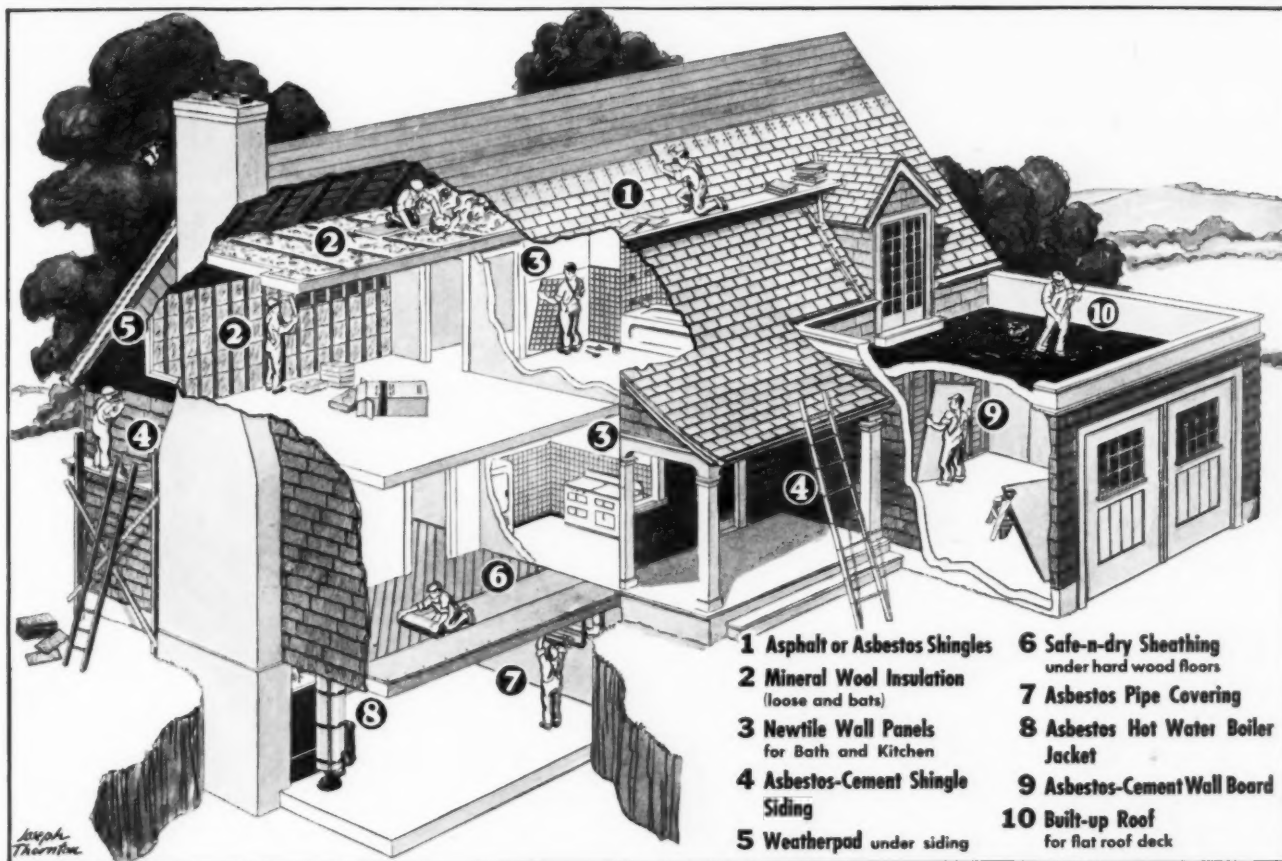
Three new low-priced Alzak aluminum floodlights, covering the range of wattages from 300 to 1,500, have been announced by General Electric Company.

The units will be used for the first time at the Texas Centennial Exposition and later at the Cleveland Great Lakes Exposition for lighting the buildings and grounds.

automatic heat

The Anchor Stove and Range Company, New Albany, Indiana, has announced a new Anthracite Model of the Anchor Kolstoker. It is furnished in either the standard type or with automatic ash removal. It is designed for use with steam, vapor, warm air or hot-water heating systems, or high-pressure boilers. It can be easily installed with any new equipment or with any heating plant now in service.

10 RU-BER-OID PRODUCTS THAT ASSURE BETTER BUILT HOMES



PICTURED are 10 RU-BER-OID Building Products that play an important role in the construction of well-built homes. In every home you plan, regardless of price range, several of these products will efficiently and economically fulfill your ideas of good construction.

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NEWS OF THE FIELD

(Continued from page 28)

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NEW BOOKLETS & BULLETINS

(Continued from page 26)

Automatic Coal Burners for the Home, Booklet No. 1541. . . . Applications of Link-Belt Stoker Firing to Commercial Heating Plants, Booklet No. 1537. . . . Automatic Generation of Process Steam, High or Low Pressure, Booklet No. 1538. Link-Belt Limited, 307 N. Michigan Ave., Chicago, Ill.

KITCHENS AND BATHROOMS

Planning Manual for Electric Kitchens. National Kitchen Modernizing Bureau, 420 Lexington Avenue, New York.

Scientific Refrigeration in Relation to Nutrition and Health, by Lulu G. Graves, Consultant in Nutrition and Organization of Dietary Departments. The Temperature Research Foundation of Kelvinator Corporation, 420 Lexington Avenue, New York.*

Personal Luxury in the Bathroom and Kitchen. Briggs Manufacturing Co., Plumbing Ware Division, Detroit, Mich.

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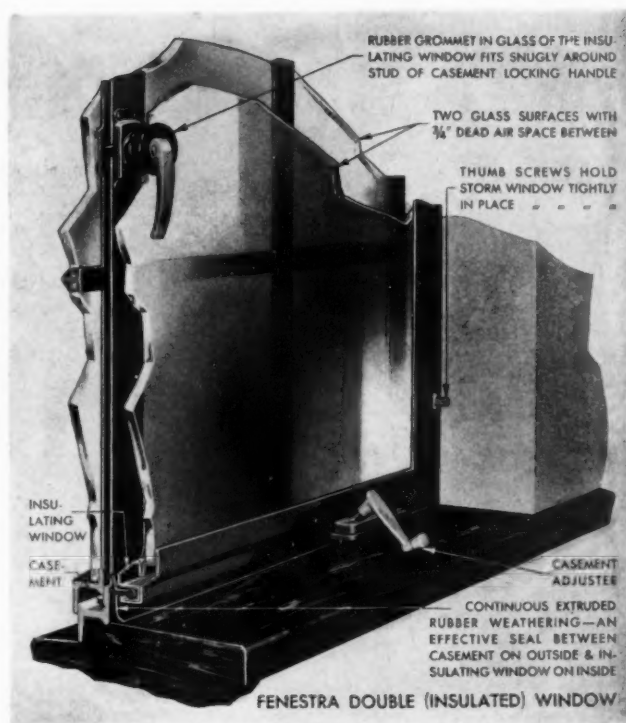
The Modern Dry Method of Fire Extinguishment. Garrison Engineering Corporation, Great Barrington, Mass.

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The Architectural Record, July 1936



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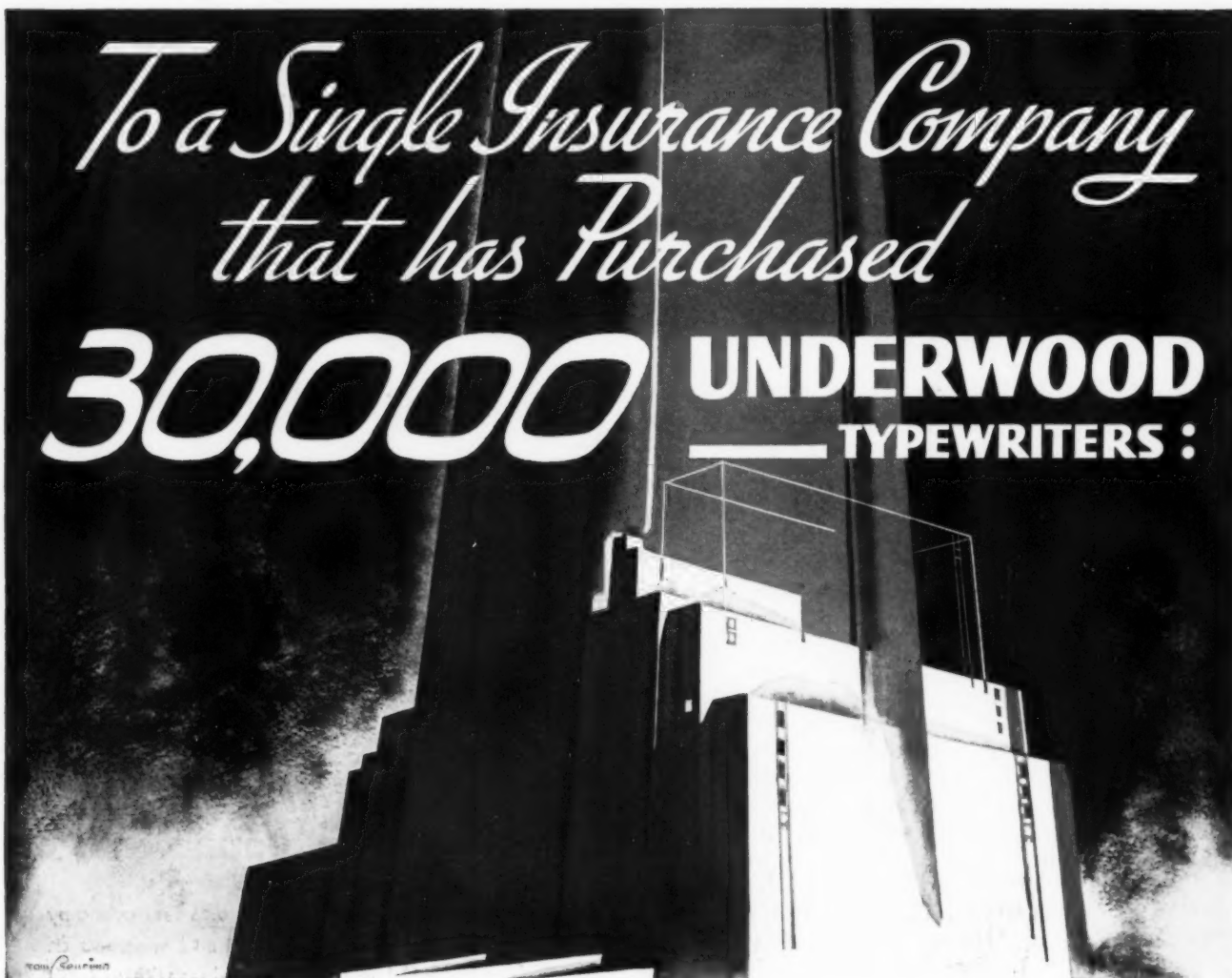
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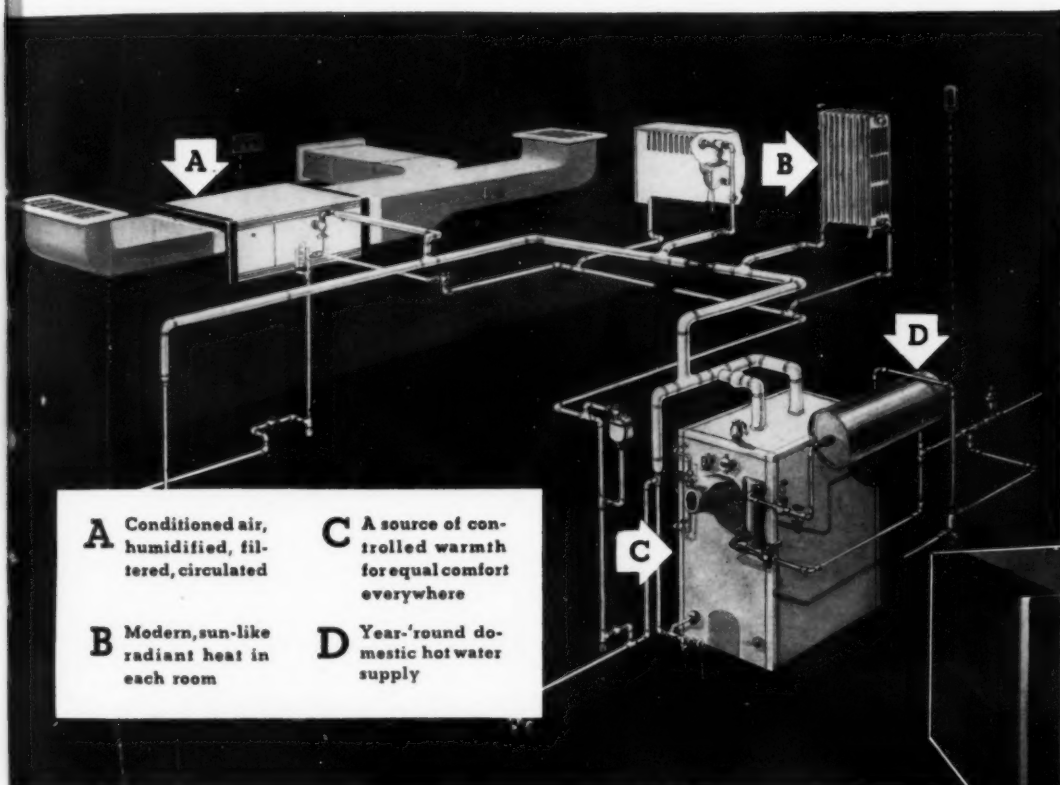
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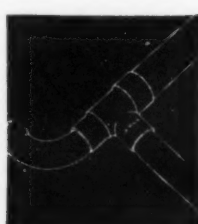
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REVIEWS OF CURRENT . . . BOOKS

THE EPIC OF SOUND UNFOLDS •

THE NEW ACOUSTICS: *A Survey of Modern Development in Acoustical Engineering.* By N. W. McLachlan. Oxford University Press: London and New York. 166 pages, illustrated. \$2.75.

A FUGUE IN CYCLES AND BELS. By John Mills. D. Van Nostrand Company, New York. 269 pages, with charts and tables. \$3.

Each of these books has been written—the first by an English authority, the second by an American—chiefly with the aim of providing a general fund of facts about acoustics. Taken together, however, they mark off the historical stages of a science that is developing with amazing acceleration.

The new acoustics, according to Dr. McLachlan, dates from the last great war. The old acoustics, linking back to Pythagoras, had concerned only musical phenomena and the measurement of sound velocity. Sabine began his studies of sound absorption in 1900, but these had not resulted in much of importance by 1914. With the war came a new impetus: the submarine attacks on shipping in 1916 made it necessary for the British scientists to devise hydrophones which would give audible warning. These anti-submarine devices led to a more complete control of sound, and in May, 1922, the first broadcast was given from Marconi House in London. The British Broadcasting Company was formed in November, 1922, and since then progress has been rapid in microphone technique, in design of transmitters and amplifiers, and in the reception of sound.

On the accomplishments of these past two decades Dr. McLachlan writes at first-hand, for he has been intimately connected with British broadcasting ever since its beginning. He has many inventions to his own credit. His book is a trustworthy account, well composed but likely to prove somewhat

heavy going in places to any reader not already familiar with acoustical terms.* A chapter on auditorium acoustics is included.

John Mills, long engaged in research in electrical communication and a member of the staff of Bell Telephone Laboratories, likewise writes at first-hand of the new developments in acoustics. His book is addressed to musicians and all those who wish to know what the electron and the vacuum tube are doing or may do to music.

So far the technical advances have had little effect on music, but the basis has been laid for a revolutionary change which Mills believes impending and inevitable. The course of this revolution, as he states in a preface, may be forecast or guided only by those who know with some exactness what electricity can do.

Already, then, the scientific control of sound is entering a new epochal phase! The moment it became possible electrically to reproduce all the sounds of orchestral music, there was passed the boundary between natural and electrical music. This moment, according to Mills, occurred April 27, 1933, when a concert by the Philadelphia Orchestra was picked up by transmitters in its Academy of Music, transmitted by special telephone circuits to Washington and there reproduced in Constitution Hall. This historic demonstration, conducted under the auspices of the National Academy of Sciences, marked the conclusion of a series of telephonic researches in which Dr. Leopold Stokowski and the Philadelphia Orchestra had assisted.

For the first time music had been reproduced in full auditory perspective, essentially as it was heard in the original auditorium. Each of the three channels (microphone, line, amplifier, loudspeaker) constituting the "stereophonic" system transmitted all sounds audible to the human ear—a range from 40 to 15,000 cycles. The full in-

tensity range of the orchestra—a total of 70 decibels—was reproduced. All aspects of the demonstration were under the control of Dr. Stokowski who manipulated the dials and conditioned the music of the distant orchestra, producing "according to his imagination tonal effects and intensities beyond previous human possibilities."

As Mills argues, the music of the future can go beyond synthetic imitations of sounds naturally or mechanically produced. Electrical music, probably superior to traditional music, is entirely possible. After all, if pleasant sounds can be produced from catgut under friction, then the electrical devices which are today in prospect can produce even more remarkable and unheard-of effects—"complexes of musical tones far beyond the dreams of composers; they offer untold possibilities but require new skills for their use."

This is the crux. Techniques and mechanisms are available which will produce musical tones with a precision beyond that possible to human performers. But there have been almost no exact researches on the relative importance of variations in sound in relation to pleasurable sensations or emotion. The auditory threshold of a listener varies from day to day by several decibels. Auditorium conditions vary with changes in atmospheric conditions. Musicians differ in performance. Many things are theoretically possible with electro-acoustics—for example, Mills suggests as a field of research the development of libraries of templates covering all desirable combinations of tones—but their commercial accomplishment depends on an effective economic demand which may yet be long in coming.

Seemingly, in their pioneering, the electrical engineers have proceeded far ahead of the musicians and the rest of the world. The gap is great between what is done and what can be done. There are difficulties even in language

(Turn to page 32 adv.)

* A good elementary textbook—*Introductory Acoustics*—has been written by George Walter Stewart, professor of physics in the University of Iowa. Published by D. Van Nostrand Company, New York. 200 pages, illustrated. \$2.75.

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CURRENT BOOKS

—the musician speaks in terms of diatonic scales and personal emotion, the engineer in terms of the decibel scale and technical precision.

The field of music, perhaps even more than the field of architectural design, is steeped in sentiment and tradition. Because so often good, the old is relinquished reluctantly, even when the new is better. It is the chief virtue of Mills' book that he describes the new possibilities in electro-acoustics with such excitement that it seems certain that every reader will share his enthusiasm for new designs in musical forms.

The revolutionary implications of technological advance, so well set forth by Mills in the case of sound control, extend also into other lines. Throughout the whole field of architectural design similar changes are observable. There is an increasing scientific control of light, of atmosphere, of structural elements, even of human activities. All of these demand their proper correlation and integration into a radically new design synthesis. The problem is not just fitting the new achievements of technology separately into architectural forms which have evolved out of the requirements of a pre-industrial age. The design objective is in the opposite direction—the development of entirely new structural forms which will integrate and promote the control of environmental forces to the advantage of human life.*

Mills' book points in this direction. As a guide to new design possibilities, the book is required reading for the pioneering architect as well as the pioneering musician.

ARCHITECTURE IN THE BALANCE. *An Approach to the Art of Scientific Humanism.* By Frederic Towndrow, A.R.I.B.A. Frederick A. Stokes Co., New York. 1936. Price \$2.50.

Architecture, according to Mr. Towndrow, has reached a state unprecedented in the history of the art. "It

may be that it is physically degenerate and that, in any of the forms in which we are accustomed to regard it, it will pass out of existence . . . this curious manifestation which goes under the name of an art is neither one thing nor another. It is neither honest building, nor is it frankly a kind of romantic scenery. It stands vaguely between the two, satisfying neither condition and pleasing no one." Mr. Towndrow believes that the engineer stands in the public mind as someone more definite and more useful than the architect. Yet it is "not incompatible with the architect's functions to establish the idea of his certainty and economic necessity in all questions of planning, from the planning of cheap houses to vast factories and towns".

However, planning is but one of a number of functions of architecture. Mr. Towndrow makes no systematic attempt to enumerate, define and correlate these but offers instead a critical examination of current rationalizations of architecture as art. His chapters on Individualism, Aestheticism, Expressivism, Formalism and Constructivism clear the way for independent thought on the true nature of Architecture, even if one cannot follow at all points the argument which leads Mr. Towndrow to conclude that "a great architecture is anonymous, communal and international".

HOUSING OFFICIALS YEAR-BOOK: 1936. *National Association of Housing Officials, 850 East 58 Street, Chicago.* Price \$2.

No better record of activities in the administrative aspects of housing is available than this publication of NAHO. Besides a review of the activities of the Association, it summarizes those of many state and local housing agencies, both official and otherwise. There is a compilation of the status of housing legislation in the various states, together with analyses of judicial and legislative action in the field of housing. Government agencies are dealt with at length; Coleman Woodbury, NAHO's Director, and Sir Raymond Unwin analyze English housing relative to American condi-

tions; many other phases are covered in a wide variety of articles.

As a technical performance, the Yearbook is an achievement in a nation which four or five years ago had scarcely heard the word "housing." Yet the fact cannot be overlooked that in terms of actual housing the officials who compose the NAHO have pitifully little to show—some 30,000 dwelling units in a country which needs between 10,000,000 and 15,000,000. Nor does the Yearbook give any clue as to the one means whereby housing in any true sense can be achieved—by independent political action on the part of that sector of the population which is so ill-housed today.

DISTINGUISHED HOUSES OF MODERATE COST. *Edited by Raymond B. Hand. Robert M. McBride & Co., N. Y., 1936. \$3, board cover.*

These fifty selected houses, in most cases with plans, represent what architects can do when costs are not a limiting factor. The "moderate cost" label attached to the title of the book is misleading. This is not altogether unfortunate since the houses, in the main, are of the luxurious and spacious kind which the average American wants—with the hope that such a house can be obtained at moderate cost. It is a forlorn hope, if \$10,000 actually represents moderate cost.

The book is recommended to architects who cherish the work of representative architects and decorators such as Frank J. Forster, Harrie T. Lindeberg, Donald Deskey, John Russell Pope, Lloyd Wright, Cameron Clark, William Lawrence Bottomley, Peabody, Wilson and Brown.

A Japanese house in California, without pretense, highly livable, and elegant, is clearly the most distinguished house of the volume. It appears to have been designed without benefit of architect. At any rate no credit is given to its creator.

HELLENISTIC ARCHITECTURE. *By Theodore Fyfe. Macmillan Company, New York City. Price \$6.*

This is primarily another of those textbooks on Greek architecture of which, as Mr. Fyfe admits in the fore-

(Turn to page 34 adv.)

* For a further discussion of this point, see article, "Design for Environmental Control," which appears in the *Technical News and Research* section, pages 157-159, of this issue.

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CURRENT BOOKS

word, there has already been too great a production. He wrote this book because of "the bewilderment of younger students" as to the actual meaning of the term *Hellenistic*. And while he has done a scholarly job, the question inevitably arises as to how much the "bewilderment" of the students will be answered by another text on classic architecture. The whole problem is one of scale: What is the relative importance of understanding the true meaning of "Hellenistic" as compared to grasping the true significance of current social and economic developments and their effect upon both students and the structures they hope to build?

The text has continuity and is profusely illustrated with sketches and photographs by the author. It comes closest to real interest in the chapters devoted to domestic architecture and civic design, though even here the analysis is purely mechanical. Though the student may be less "bewildered" about Hellenistic architecture at the end, he will certainly have little knowledge of the Hellenes themselves.

BIBLIOGRAPHY OF PLANNING (1928 - 1935). By Katherine McNamara. Harvard University Press, Cambridge, Mass. 1936. 332 pages. Price \$3.50.

The more important data on planning found in books, magazine articles and technical papers issued since 1928 are listed in this bibliography by the librarian of the School of City Planning at Harvard University. Prior to this date the material was adequately covered in the Manual of Information on City Planning and Zoning (1923) and its 1928 Supplement. Such subjects as State and National Planning and Housing earn greatly expanded sections here, although, in the main, the same system of classification has been used as in the earlier volumes. An outline of the classification, which will be useful in studying the general organization of the subject, precedes the list of references. At the end of the volume are alphabetical author and subject indexes.



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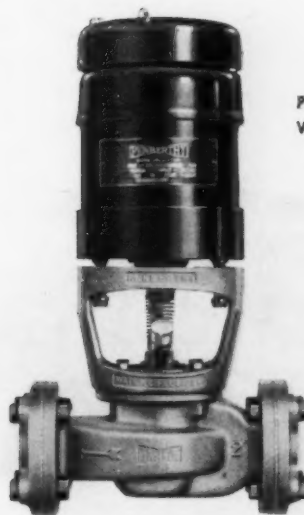
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Made in 2 Models

Relief valves and pressure reducing valves are other items in the line of Penberthy Hot Water Heating Specialties. All are constructed of high grade steam bronze; design and workmanship are also of exceptional quality. Your jobber will gladly give you complete information and supply your needs.



PENBERTHY INJECTOR COMPANY

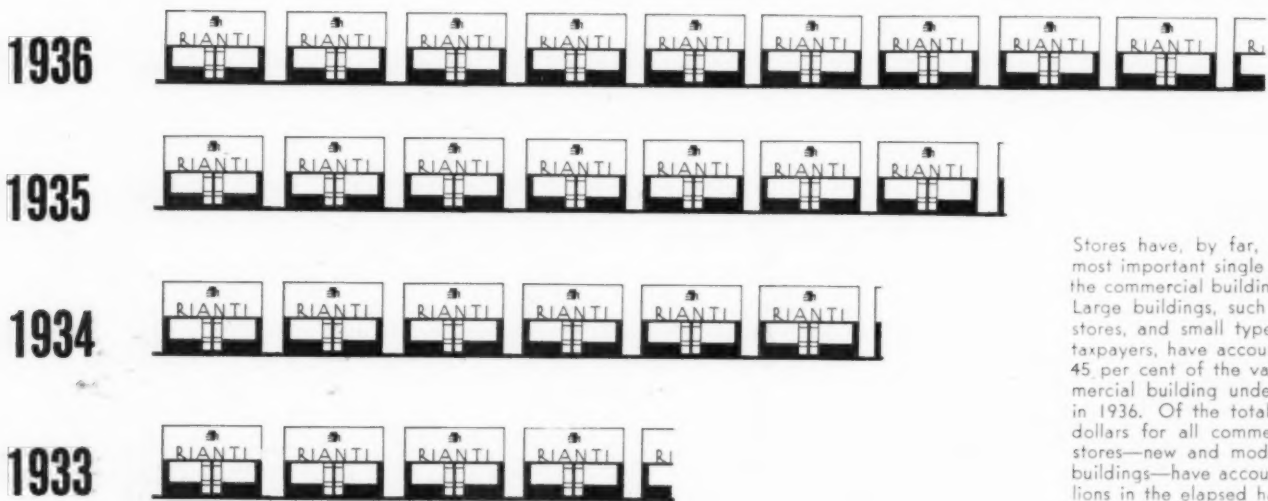
Manufacturers of QUALITY PRODUCTS Since 1886
DETROIT, MICHIGAN • Canadian Plant, Windsor, Ont.

MORE BUSINESS MEANS MORE BUSINESS BUILDINGS

By L. SETH SCHNITMAN
Chief Statistician
F. W. Dodge Corporation

The march of business toward higher levels of activity has always brought with it collateral gains in building of the special types of structures in which business is carried on. And so has it been even in the current cycle, now well under way. Commercial buildings—that is the way we designate these special business types—have shown an increase in construction during the first half of 1936 amounting to 45 per cent as against the volume for the corresponding period of last year. What is more, the current half year construction total for commercial buildings—garages, service stations, offices, bank buildings, stores, restaurants, warehouses—is 240 per cent of the volume reported during the initial six months of 1933, the low point of the depression. Further improvement in commercial building operations appears as a practical certainty now that business conditions are better, vacancies are declining, and rents are firming.

STORE BUILDING VOLUME MORE THAN DOUBLES SINCE 1933

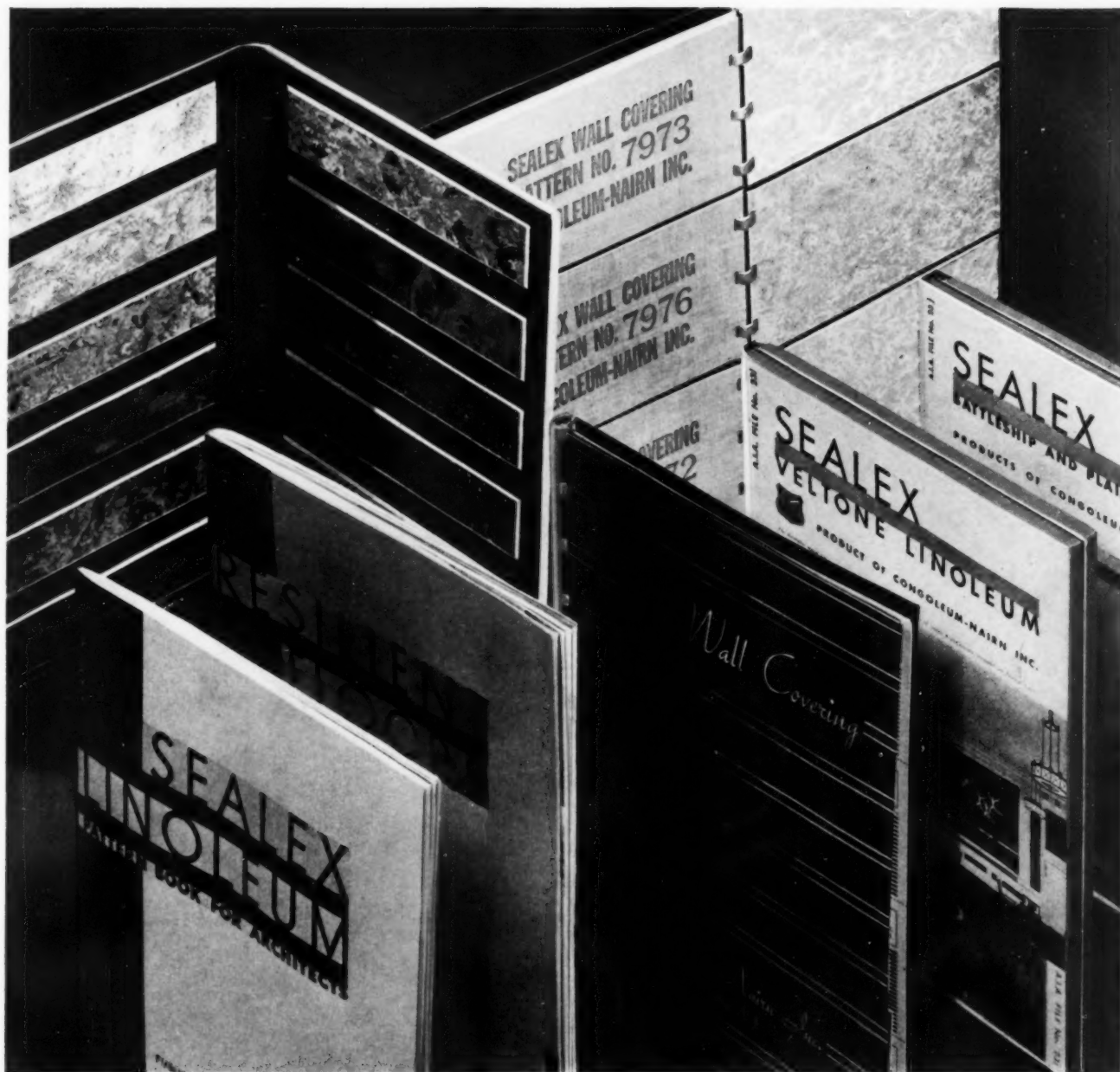


Stores have, by far, constituted the most important single classification in the commercial building field of 1936. Large buildings, such as department stores, and small types, too, such as taxpayes, have accounted for almost 45 per cent of the value of all commercial building undertaken thus far in 1936. Of the total of 110 million dollars for all commercial buildings, stores—new and modernized existing buildings—have accounted for 48 millions in the elapsed half of this year.

STRIKING GAINS IN WAREHOUSE BUILDING SINCE DEPRESSION LOW



Commercial warehouses in the first half of 1933 accounted for considerably less than 10 millions of construction. By 1936 the first half total has grown to 25 millions. During 1936 to date warehouses have accounted for about 23 per cent of all commercial building.



FOR YOUR A.I.A. FILE—complete architect's file on linoleum floors and wall-covering

Patterns, color samples, gauges, specifications and installation methods for linoleum floors and wall-covering are contained in these five books. They are standard A.I.A. file size and carry proper reference numbers:

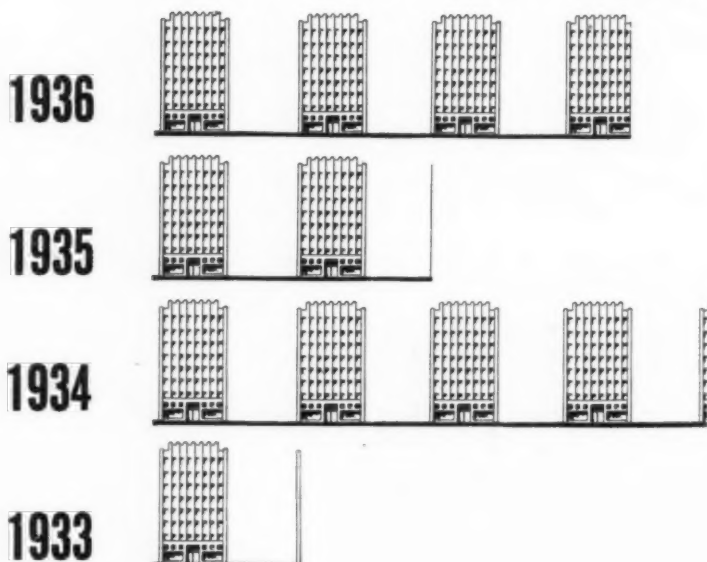
- Sealex Linoleum Pattern Book for Architects—A.I.A. No. 23-J
- "Resilient Floors"—A.I.A. No. 23-J
- Sealex Veltone Linoleum Sample Book—A.I.A. No. 23-J

- Sealex Battleship and Plain Linoleum Sample Book—A.I.A. No. 23-J
- Sealex Wall-Covering Sample Book—A.I.A. No. 28-C

Specially prepared for the architect, these books will bring you full information on linoleum floors and wall-covering for every type of building, and are profusely illustrated in color. Write for them today—and have a complete file on this subject. CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

SEALEX *Linoleum Floors and Wall-Covering*

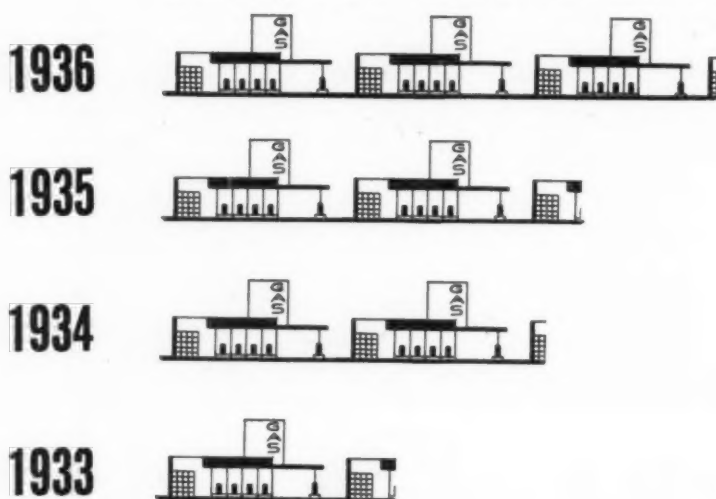
OFFICE BUILDING SHOWS GAIN ALSO



The construction of office buildings had almost come to a dead stop in early 1933. The succeeding year brought an important recovery chiefly because of further activity in connection with the Rockefeller Center development in New York City. With this out of the record, 1935 resumed its position of more or less natural growth for the improving cycle which had begun in 1934. Thus far in 1936 office building construction projects have amounted to some 19½ million dollars as contrasted with less than 10½ millions for the initial half of 1935, with 21½ millions for the same period of 1934 when additional units were undertaken in the uncommonly large Rockefeller project, and as contrasted with only 5½ millions for the first half of 1933.

Much modernization has already occurred in office buildings but still more remains if expanding demands of a discriminating clientele are to be met. Coupled with this is the probability that more new office structures are in the offing if the customary harbingers of better general business conditions may again be relied upon as an index to office building demand.

GARAGES AND SERVICE STATIONS DRIVE AHEAD



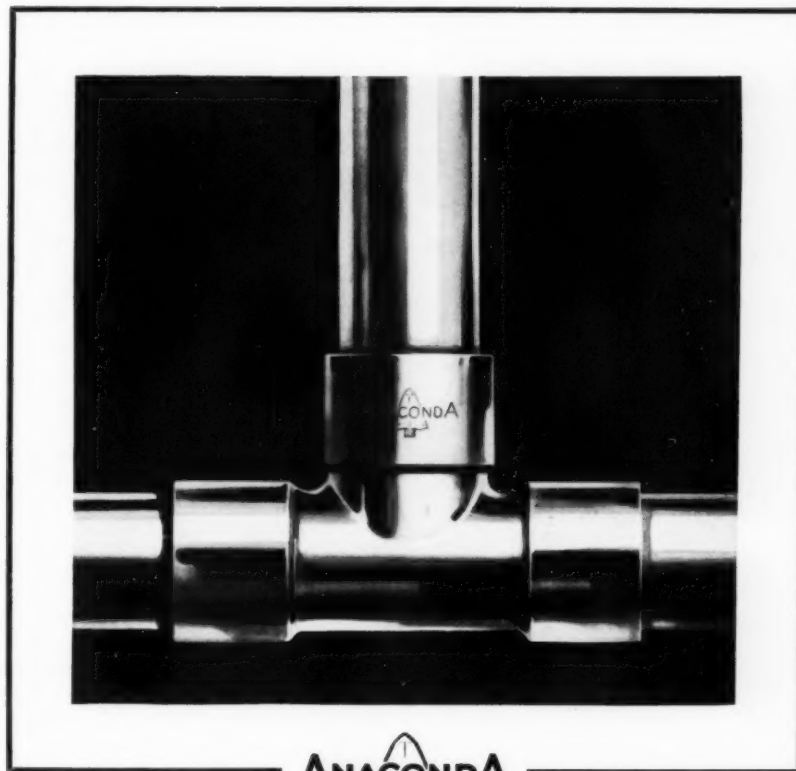
The automobile was among the first major industries to stage a recovery. This improvement, bordering almost upon the phenomenal, induced gains in many other sectors of the economic fabric. The building industry has not failed to participate, for, in the chain of bettering conditions, it was natural to expect to find increased building of commercial garages and service stations.

We have probably already witnessed the maximum quantitative volume of such construction—that appears to have been back in the 20's—but the total of some 15½ millions in the building of facilities to service our automobiles during the initial six months of this year represents nonetheless an appreciable gain over the figure of only 8½ millions for the first six months of 1933. What appears as even more significant is the probability that recent gains in this type of construction will carry much further, before any reversal will occur.

All statements of figures and all charts herein relate to construction work undertaken in the 37 eastern states. All figures include both new and alteration projects.

Each complete symbol on each chart designates \$5,000,000 in construction awards of the type of building charted. Fractions of symbols designate fractions of \$5,000,000. All charts cover totals for first 6 months only, for designated years.

FOR HEATING LINES COPPER TUBES are "the last word"



ANACONDA
from mine to consumer
REGISTERED PATENT OFF.

COPPER TUBES lead to greater efficiency in hot water heating systems...give longer and more reliable service. Permanently smooth inside surfaces reduce resistance to the flow...especially in forced circulation systems. And hot water conveyed through copper tubes loses only about one-half as much heat as when black iron is used. Faster flow and reduced heat losses mean quicker circulation; the maximum amount of heat is delivered to radiators in the least possible time.

The cost? Assembled with solder-type fittings,* *the cost of a copper tube installation is scarcely any more than that of rustable material.*

Anaconda Copper Tubes and a complete range of Anaconda Solder-Type Fittings...trade-marked for easy identification...are hydraulically tested to insure soundness, and are produced to the close tolerances necessary for tight and strong soldered joints.

Where standard-size, rigid pipe is required, Anaconda Brass Pipe has long been the standard of quality. Two scientifically-determined alloys are carried in stock by leading supply houses... *Anaconda 67 Brass Pipe* for normally corrosive conditions, and *Anaconda 85 Red-Brass* for highly corrosive conditions.

*Where temperature range does not exceed 180°F., soft solder made of 95% tin and 5% antimony is recommended. "Sil-Fos" brazing is suggested for higher temperature.

THE AMERICAN BRASS COMPANY

General Offices: Waterbury, Connecticut

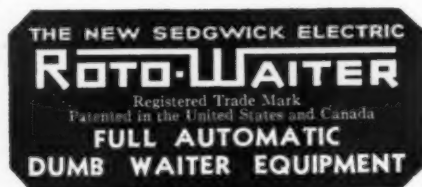
Offices and Agencies in Principal Cities

ANACONDA COPPER & BRASS



Store Plans and Specifications SHOULD INCLUDE THIS VITAL LINK

THE use of low cost space in basement or on upper floor often has a decided influence on profitable store operation. The Sedgwick Electric ROTO-WAITER provides speedy, safe and smooth dumb waiter service between floors. It has become first choice of leading chain stores and is rapidly coming into general use because of its low initial cost, low maintenance cost and many other advantages.



Our long specialized experience is at the command of all architects. If you are now considering a dumb waiter, we suggest you furnish us with the following information so we may recommend the type of equipment, electric or hand power, best suited to your needs:

1. For what is the equipment to be used? (Kind of loads)
2. How large a car is desired?
3. Who will operate?
4. Have you a place already prepared for the equipment?
5. What will be the weight of the average load?
6. What will be the weight of the heaviest load?
7. Are all loads up, all down, or both?
8. How far does the car travel; number of landings served?
9. Are all doors located in the same front? If not, locate each.

Write for Illustrated Catalog

SEDGWICK MACHINE WORKS

159 WEST 15th ST.

NEW YORK, N. Y.

Established 1893

Manufacturers of

ELECTRIC & HAND POWER DUMB WAITERS

RESIDENCE ELEVATORS—SIDEWALK ELEVATORS—FUEL LIFTS
CORRESPONDENCE LIFTS—LAUNDRY LIFTS



Are Your Clients asking about REAL LOG HOUSES?

THERE'S a profitable field for you in the persistent and increasing demand for individually planned houses of real logs. Our national advertising is bringing in thousands of inquiries from all sections of the country. Our main business is supplying the cedar logs and other materials . . . properly seasoned, cut and fitted at our mill, ready for erection. Our specialized experience embraces a wide range of individual needs, from small cabins to pretentious lodges . . . from vacation retreats to complete, modern year 'round homes.

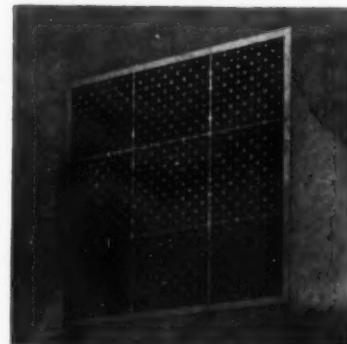
Our entire staff . . . including Chilson D. Aldrich, well known log cabin architect . . . offers you whole-hearted cooperation to facilitate the preparation of plans in your office. Many local architects already appreciate our help in the special technique of log construction. The many interesting and approved structural features which we have developed, may be readily incorporated in your plans.

Write for full information, pictures and plans of typical jobs.

PAGE AND HILL CO.

1354 Northwestern Bank Bldg., Minneapolis, Minn.

Hendrick Grilles AT BOULDER DAM



The illustration shows one of 185 Aluminum Grilles supplied by Hendrick for the huge power house at Boulder Dam.

This installation of Grilles ranging in size from 19 1/4" square to 75 1/2" square indicates the extensiveness of Hendrick's facilities. In fact, Hendrick can produce Grilles as large as 96" square and as small as 3" square.

Standard and special designs are available in great variety . . . and they can be furnished in all commercially-rolled metals. Have you a copy of the illustrated book . . . "Grilles?"

Hendrick Manufacturing Co.

19 Dundaff Street, Carbondale, Pa.

Offices and Representatives in principal cities. See 'phone book. Mfrs. of Mitco Open Steel Flooring, Mitco Shur-Site Treads and Mitco Armorgrids. Hendrick Perforated Metals and Screens.

NEW BOOKLETS & BULLETINS

In writing to manufacturers for any of the new catalogs or booklets listed in this column, mention of **The Architectural Record** will be greatly appreciated.

STRUCTURAL MATERIALS AND PARTS

Facts About Insulation. Silvercote Products, Inc., Kalamazoo, Michigan.*

Lead Shower Pans—Proved Waterproofing by Plumbers. Lead Industries Association, 420 Lexington Avenue, New York.

New Temlok DeLuxe Finishes. Armstrong Cork Products Company, Lancaster, Pa.*

Certigrade Handbook of Red Cedar Shingles, by Bror L. Grondal and W. W. Woodbridge. Red Cedar Shingle Bureau, Seattle, Washington.* Price 50c.

Ruggedwear Resurfacers. Flexrock Company, 800 N. Delaware Avenue, Philadelphia, Pa.

Penn-Dixie Concrete Tables and Recommended Mixes for Different Kinds of Work. Pennsylvania-Dixie Cement Corporation, 60 East 42 Street, New York.

Sedgwick Dumb Waiters and Elevators. Sedgwick Machine Works, 159 West 15 Street, New York.*

Morgan Authentic Woodwork. Morgan Company, Oshkosh, Wis.
The Donley Book of Successful Fireplaces, Seventh Edition. The Donley Brothers Co., 13900 Miles Avenue, Cleveland, Ohio.*

Science Examines the Kitchen. Crane Co., 836 South Michigan Avenue, Chicago, Ill.*

Book of Store Fronts. Kawneer Company, Niles, Mich.*

HEATING, VENTILATING, AND AIR CONDITIONING

Carrier Unit Heater, Kroy Type. Carrier Engineering Corporation, 850 Frelinghuysen Avenue, Newark, N. J.*

Climate Changer Bulletin No. 230. The Trane Company, La Crosse, Wis.

29 Ways to Plan a Basement. . . . Welcoming Warmth in The Home. Iron Fireman Manufacturing Co., Portland, Oregon.*

Ideal Arco Round Boiler for Burning All Fuels. American Radiator Company, 40 West 40 Street, New York.*

Air Conditioning for Commercial and Residential Installations. Baker Ice Machine Company, Inc., 1529 Evans Street, Omaha.

The Science of Re-Humidifying Indoor Air. Monmouth Products Company, 201-231 East 131 Street, Cleveland, Ohio.

Westinghouse Air Conditioning Equipment—Type CLS-259 Condensing Unit. . . . Type CLS-518 Condensing Unit. . . . Type CLS-795 Condensing Unit. . . . Type WE-55 Evaporator. Westinghouse Electric & Manufacturing Company, Mansfield, Ohio.*

Brown Air Operated Controllers. The Brown Instrument Company, Division of Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.*

The Miracle of the Radiostat, Folder 1517 Heating System, Folder 1518. Link-Belt Company, 2410 West 18 Street, Chicago, Ill.

LIGHTING AND WIRING

40 Years of Kliegl Lighting, Catalog No. 40. Kliegl Bros., 321 West 50 Street, New York.*

Catalog—Catalog on Lighting Facts. Holophane Company, Inc., 342 Madison Ave., New York.

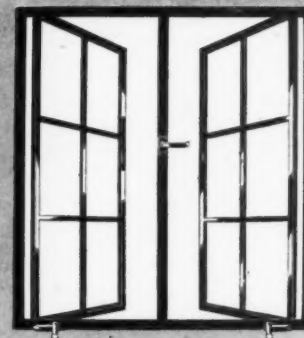
P & S Alabax Porcelain Lighting Fixtures, Catalog AL-2. Pass & Seymour, Inc., Syracuse, N. Y.*

A Handbook of Wires and Cables for All Occupancies and Types of Conditions. Anaconda Wire and Cable Company, Sales Pro-

(*) See other information in Sweet's Catalog File.

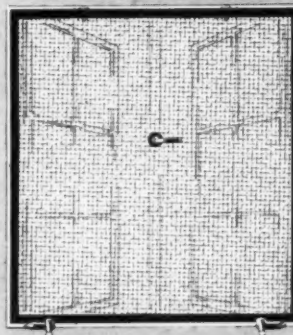
STEEL CASEMENT

Note that one handle on the meeting rail locks two swing leaves at once. Swing leaves operated by roto-adjusters at sill. Hundreds of stock types and sizes: some with fixed sidelights, transoms, Tilt-in sill ventilators, circular heads, etc.



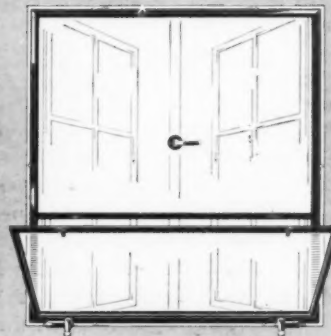
INSIDE SCREEN

One bronze-mesh screen covers both swing leaves. Locking handle extends through grommet in center. Windows opened, closed, locked without touching screens. Flat metal frames are non-warping. Screens need not be numbered for storage.



INSIDE STORM SASH

Replaces screen in winter. Extruded rubber weathering around handle and around perimeter of frame seals opening tight. Provides 3/4" insulating, dead-air space. Double strength glass. Tilt-in sill ventilator admits fresh air. "Fixed light" types also available.



WINDOWS FOR AUGUST —AND JANUARY!

Fenestra's complete window—Steel Casement, Inside Screen and Inside Storm Sash—brings the home owner year 'round comfort and convenience: Frost-free glass, important fuel savings, and more daylight, in winter; protection against insects, and better ventilation, in summer; finger-touch operation; safe cleaning; fire safety; etc. Write for details. DETROIT STEEL PRODUCTS CO., 2255 East Grand Boulevard, Detroit, Michigan.

Fenestra



For the Architect. Have new walls decorated promptly. No long wait for walls to dry—no danger of lime burning. Texolite produces a durable, lasting paint job. Beautiful colors, high reflection, no glare, economical decoration.

For Softer Colors... Subtle Effects

TEXOLITE

CASEIN WALL PAINT

■ More and more, architects are specifying Texolite. They have found that this new type casein wall paint brings out the full beauty of all interiors. With Texolite, you can create any desired effects ranging from exquisite softness to the most brilliant contrasts—effects not possible with ordinary paints. Just as important, Texolite colors last indefinitely.

In addition, Texolite has the advantage of an unusually high reflection value. It reflects as much as 90 per cent of the light which strikes it, cutting the client's lighting costs. For proof of Texolite, try it yourself—at our expense. Just mail the coupon below for free sample can. It will be sent promptly.

TEXOLITE HAS THESE ADVANTAGES

1. Hides in one coat.
2. Dries in one hour
3. Goes 25% farther.
4. No brush marks.
5. No paint odors.
6. Does not yellow.
7. One gallon makes one and one-half gallons of ready-to-use paint.

TRY TEXOLITE AT OUR EXPENSE

Architects everywhere are enthusiastic about Texolite advantages—its beautiful colors, its economy. Mail coupon today. We will send you complete information and a FULL QUART OF TEXOLITE absolutely FREE.

UNITED STATES GYPSUM COMPANY
300 West Adams Street, Chicago, Illinois

Please send me, free of charge, a sample full quart can of Texolite Paint, together with a sample of Texolite Deep Color and handy Color Guide.

My Name.....

Address.....

City..... Phone No.....



AR-8



UNITED STATES GYPSUM COMPANY

MARKETING NEWS of the FIELD

independents as modernization projects

The manufacturers of the Sedgwick line of dumbwaiters, elevators, hoists and lifts (Sweet's Catalog File 30/10) report a large potential market for lifting and lowering equipment in connection with independent retail stores and service establishments. The statement to this effect goes on to say that the independents have lagged behind the chains in applying modern principles of planning to utilize high-premium space for floor sales, service rooms and executive offices.

In modern planning extensive use is made of lifting, lowering and other conveying equipment to correlate routine functions—storage, bookkeeping, shipping and the like—with the high-premium space. The market study by the Sedgwick Machine Works therefore reveals by implication a field for architectural services. "Even the small units of chain drug stores, chain restaurants, chain tire stores, chain varieties and other lines use elevators and dumbwaiters. Their example could be followed to advantage by independents everywhere."

The following check list, taken from this report, shows what lifting and lowering equipment is ordinarily used in connection with the various kinds of retail business.

| CLASS OR USE OF BUILDING | PASSENGER ELEVATOR | FREIGHT ELEVATOR | SIDEWALK ELEVATOR | DUMB WAITER |
|---|-----------------------|---------------------|----------------------|----------------|
| Automotive Parts and Accessories..... | | | | |
| Bakery | * | * | * | * |
| Bank | | * | | * |
| Batteries, Ignition and Tires..... | | * | | * |
| Beverages | | * | | * |
| Books | | | | * |
| Candy and Confectionery..... | | | | * |
| Chain Drugs | | | * | * |
| Chain Restaurant | | * | * | * |
| Chain Varieties | | | * | * |
| Cigar | * | | | * |
| Clothing | * | * | * | * |
| Department | | * | * | * |
| Drinking Places, Taverns and Bars..... | | | * | * |
| Drugs | | * | * | * |
| Electric and Gas Household Appliances..... | * | * | * | * |
| Funeral Directors | * | * | * | * |
| Furniture | * | * | * | * |
| Furniture and Undertaking..... | * | * | * | * |
| Garages, Auto Parts and Repairing..... | | * | * | * |
| Groceries and Meats..... | | * | * | * |
| Hardware | | * | * | * |
| Hotel | * | * | * | * |
| Jewelry and Optical Goods..... | | * | * | * |
| Laundry | | * | * | * |
| Liquor | | * | * | * |
| Luggage and Leather Goods..... | | * | * | * |
| Market | | * | * | * |
| Music and Radio..... | | * | * | * |
| Office and Store Equipment..... | * | * | * | * |
| Offices | | * | * | * |
| Photographic Supplies | | * | * | * |
| Printing and Publishing..... | | * | * | * |
| Refrigerators and Refrigerating Apparatus.. | | * | * | * |
| Restaurants | | * | * | * |
| Shoes | | * | * | * |
| Soda Fountain | | * | * | * |
| Stationery and Paper Products..... | | * | * | * |
| Under-A-Dollar Varieties | | * | * | * |
| Warehouses | | * | * | * |

Note: The classifications are from Dun & Bradstreet's lists of Retail Businesses and the suggestions are based on many thousands of actual installations made by a single manufacturer.

**PROBLEM
No. 2**

THE ELTONS ARE YOUNG AND MODERN



THEY WANT A LIVABLE, MODERN HOME

LIKE



THIS

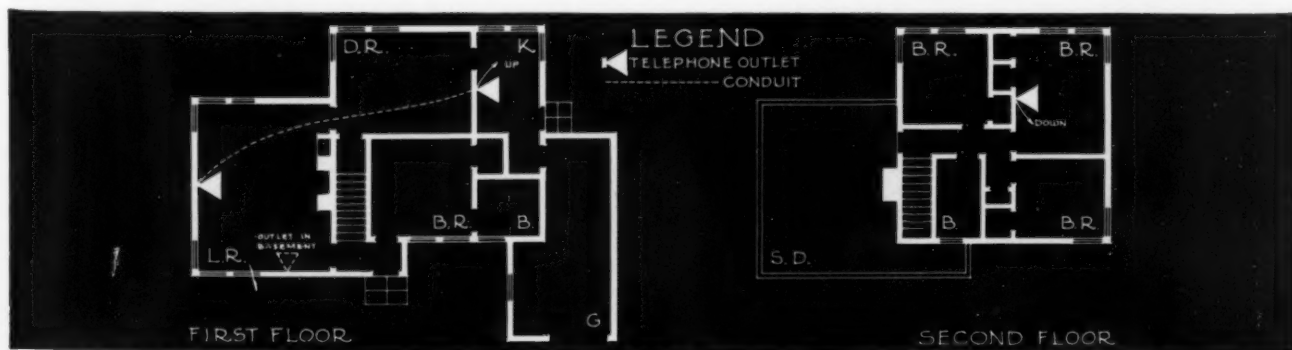
**WHAT TELEPHONE ARRANGEMENTS
WILL YOU PROVIDE FOR THEM?**

WALLY ELTON'S going places in business. Helen still does fashion drawings. They want a very modern, very livable home — complete with air-conditioning, sun deck and maid. They've approved the tentative plans on this page. *What about the telephone arrangements?*

Built-in conduit becomes doubly important here. New type structural materials — steel, concrete, glass, asbestos — make it more difficult to install telephones unless conduit has been included in walls and floors, with outlets at strategic points.

For the busy, active Eltons, there should be at least four outlets. Master bedroom. Living-room. Kitchen. Basement recreation room. All four need not be immediately connected, but they're *ready* when wanted. The complete layout costs little, adds neatness, service protection, and *lots* of living-comfort.

• This is a suggested approach to a typical problem. Telephone engineers will help you custom-tailor efficient, economical conduit layouts for any of your projects. Just call your local Telephone Office and ask for "Architects' and Builders' Service."



FOR FURTHER INFORMATION ON BELL SYSTEM TELEPHONE SERVICES AND EQUIPMENT, SEE SWEET'S CATALOGUE FILE

MARKETING NEWS OF THE BUILDING INDUSTRY

new model conditioner

A new small conditioner of the Climate Changer Series has just been added to the Trane Line for use on split systems. Although the unit is sold separately, it is built especially for the dual system, one of the five Trane systems designed for residential air conditioning. The new Climate Changer is to be known as the Number O Unit and provides

complete year-round air conditioning for the favorite rooms. With the exception of a single fan blower assembly, this unit is almost identical to other Climate Changer models.

low-priced tempered-air unit

Gar Wood Industries, Inc. (Sweet's Catalog File 26/20), Detroit, is now manufacturing an

automatic oil heating and air conditioning unit which sells for a lower price than any previous model. This new unit, called 102-A, is designed for the average home. It contains all the features and mechanism to be found in the standard, but higher-priced 102 model.



Awnings offer the ideal sun protection for stores. Tests have proven that stores equipped with awnings are 16 to 20 per cent cooler. Awnings also reduce operation expense of air conditioning systems.



Stouffer's Restaurant—Playhouse Square, Cleveland, Ohio.
Architects—Ockert and Teare—Cleveland, Ohio.

Recess awning boxes are the modern development. Awnings and awning mechanism can be installed and operated within their confines — providing protection against the elements. When Astrup Awning Mechanism and Astrup Tenso-Lok Arms are used in the awning frame construction there are no protruding awning metal parts to obliterate the architectural beauty of the store front.

Astrup is prepared to help you in designing recess awning boxes and, that more recent development, concealed awning enclosure panels which close up the aperture of the recess box.

See our advertisement in Sweet's Catalog Section 19/42.

Write or clip and return coupon TODAY for details.

THE ASTRUP COMPANY

2937 WEST 25th STREET

Established 1876

CLEVELAND, OHIO

Send photostatic details and complete information on recess boxes and concealed enclosure panels.

Firm Name

Address

City

Attention of

... and when you
think of Awnings
for that New Store
Front—Consider

ASTRUP

MECHANISM and

TENSO-LOK ARMS



York Ice Machinery Corp.

vertical air conditioners

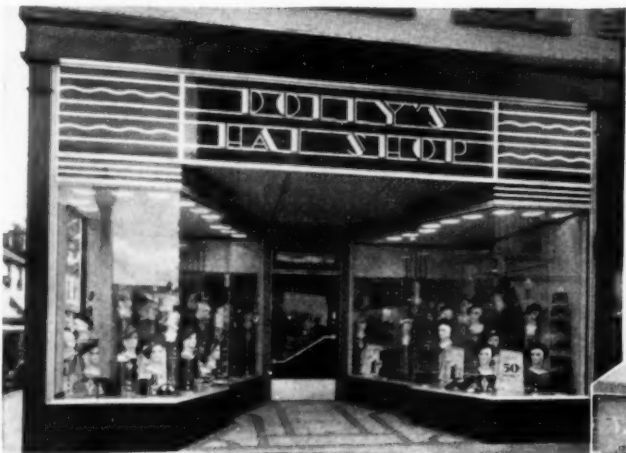
The York Ice Machinery Corporation (Sweet's Catalog File 26/21), York, Pa., has added several new vertical type all-year conditioners to its line of standard equipment. Like the horizontal units, the new vertical units are used for conditioning of single rooms, or groups of rooms from one unit. In the group system, several rooms with similar load characteristics are conditioned by a single unit, and in large installations several air conditioners may be operated in multiple from a central refrigerating machine.

Kewanee air conditioner

Supplementing its line of residence boilers, Kewanee Boiler Corporation (Sweet's Catalog File 26/29) now offers equipment for air conditioning in homes and small buildings. A type RK conditioner, teamed with a type "R" boiler, produces a controlled supply of clean air automatically warmed, humidified and positively circulated. Details are given in Kewanee Circular RK-92, sent on request.

(Turn to page 48 adv.)

FORMICA *Peps up* THE INSIDE AND OUTSIDE OF STORES



● Formica store front on one of Dolly's Hat Shops. Leo Abrams, Architect. Installed by Sol Abrahams & Son Construction Co., St. Louis.



● Stair well, Neisner's, Cincinnati, with Formica paneling.



● Hosiery counter with Formica top and base and Formica translucent signs. Famous-Barr, St. Louis. I. E. Safer, Store Architect.

BOTH the inside and outside of many store buildings have been appropriately modernized by the use of Formica. Chain stores are employing it for wall paneling, soda fountains, lunch counters and store fronts.

The material is smooth and modern; it is available in more than 50 colors, and with inlays in metal or contrasting colors. It is installed with chrome colored trim.

Because of its unusual chemical inertness Formica is extremely durable and easily cleaned. Surfaces finished with it never need to be re-finished.

Let us send you the facts.

THE FORMICA INSULATION CO.
4620 Spring Grove Avenue
Cincinnati, Ohio

FORMICA

FOR BUILDING PURPOSES

MARKETING NEWS

Carrier air conditioner for homes

Carrier Engineering Corporation (Sweet's Catalog File 26/3) announces the introduction of a new residential line comprising an oil burner, boiler-burner units—oil and gas, winter and year 'round air conditioning. With these additions, Carrier is now enabled to serve homes with "Manufactured Weather" just as it has been providing comfort in industry and business. The air conditioner is adaptable to existing automatically controlled boilers. Other combinations provide for zone control or split systems. Equipments are available in two sizes suited to large and small houses. Domestic water heating is provided for winter and summer and for use with or without a storage tank.

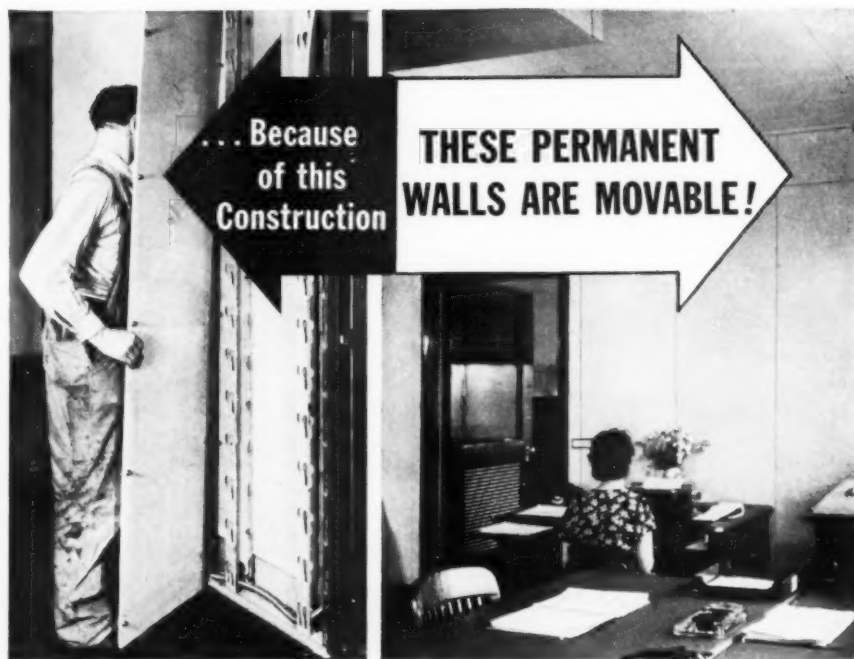


new valves for copper piping

Jenkins Bros. (Sweet's Catalog File 24/17), 80 White Street, New York, has introduced a complete line of "Solder-End" valves for 150 pounds service on copper lines. An eight-page folder, giving list prices and details can be obtained from the manufacturer.

framed door mirrors

A mirror which comes completely framed and ready to attach to the door with four screws has been put on the market by the Pittsburgh Plate Glass Company (Sweet's Catalog File 17/1). Any door can be converted into a full-length mir-



NOW—a wall offering all the advantages of permanence and adaptability... PLUS 100% salvage value in relocation

NO WONDER J-M Transite Walls represent the first truly practical and economical solution to modern partitioning problems...

They provide the same permanent solidity, privacy, decorative possibilities of fixed walls—AND—an exclusive construction method makes them movable, with 100% salvage value!

The material—Transite—carries a 25-year industrial-service record of extreme ruggedness and fire resistance earned under varied conditions. And the concealed steel channels and studs used in erection guard this permanence with a structural framework as lasting as the building itself!

Ingenious mechanical holding devices, also concealed, assure rapid, dry assembly with minimum dirt, disturbance and cost—or equally fast relocation, with no loss of material.

Decorative treatments can be varied to individual taste. Transite Walls lend themselves perfectly to any finish desired, and to every type of space or service condition.

Further information on this remarkable partition, together with full details on the exclusive J-M unit construction method, are given in our Transite Wall brochure. For a copy, write to Johns-Manville, 22 E. 40th Street, New York City.



Johns-Manville **TRANSITE WALLS**

ror door within a few minutes with this product. The mirrors are made of Pittsburgh polished plate glass, held in frame with concealed metal clips at corners and sides. Back of mirror is protected with heavy cardboard covering.

Pittsburgh Plate Glass fellows

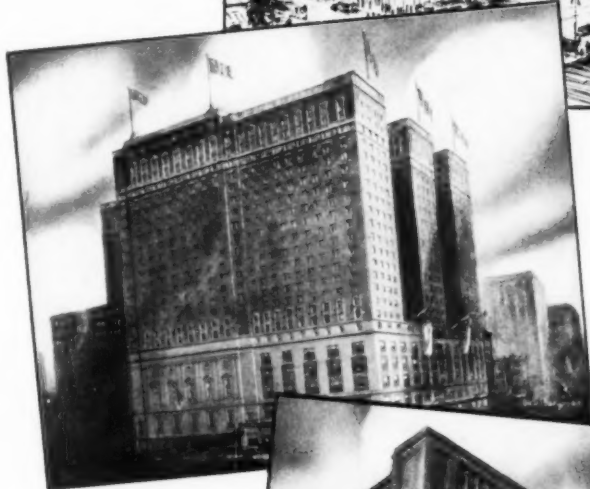
Dr. Edward R. Weidlein, Director, Mellon Institute of Industrial Research, Pittsburgh, announces that the Pittsburgh Plate Glass Company has founded a Multiple

Industrial Fellowship in that institution. Dr. Frederick W. Adams, who has been selected as senior incumbent of this Fellowship, comes to Mellon Institute from the Massachusetts Institute of Technology. His staff on the Fellowship includes Dr. John D. Jenkins, Dr. Harold E. Simpson, Dr. Lee Devol, Dr. Kenneth B. McAlpine, and Phillip W. Crist. Work includes studies in the technology of glass, heavy chemicals, paints, varnishes, lacquers.

(Turn to page 50 adv.)

**Morrison Hotel,
Chicago, Ill.**

Architects—Holabird & Roche, Chicago
Roofing Contractors—Advance Roofing & Sheet Metal Works, Chicago
Genasco Standard Trinidad Built-up Roofing still in good condition after 21 years.



**Palmer House,
Chicago, Ill.**

Architects—Holabird & Roche, Chicago
Roofing Contractors—Advance Roofing & Sheet Metal Works, Chicago
Genasco Standard Trinidad Built-up Roofing applied in 1924—not a penny spent in repairs according to records of June 1936.



**Sherman Hotel,
Chicago, Ill.**

Architects—Holabird & Roche, Chicago
Roofing Contractors—Advance Roofing & Sheet Metal Works, Chicago
Genasco Standard Trinidad Built-up Roofing applied in 1926—still in good condition.



Stevens Hotel, Chicago, Ill.

Protected since its erection in 1927 with Genasco Standard Trinidad Built-up Roofing.
Architects—Holabird & Roche, Chicago
Roofing Contractors—Advance Roofing & Sheet Metal Works, Chicago

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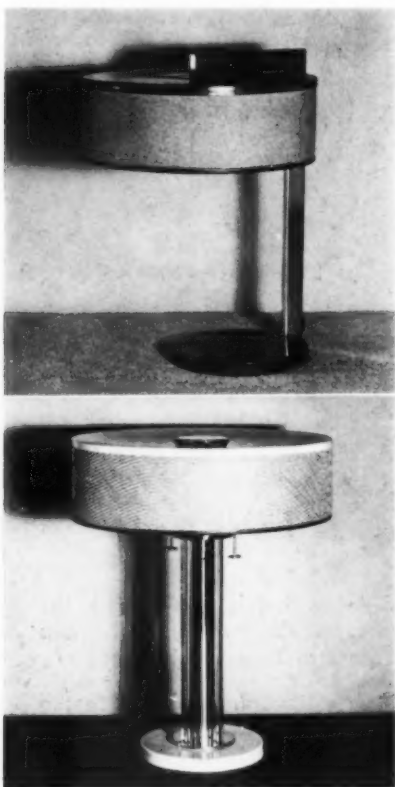
1. Copy of your book "For Your Roof" illustrating prominent buildings protected with Genasco Standard Trinidad Built-up Roofing.
2. Don Graf Data Sheets outlining properties of Trinidad Lake Roofing Asphalt—also giving data on asphalt mastic flooring.

Name

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MARKETING NEWS



new lightolier designs

A group of 35 new lighting fixtures designed by Kurt Versen has been put on the market by Lightolier Company, 11 East 36th Street, New York City.

inconspicuous wiring devices

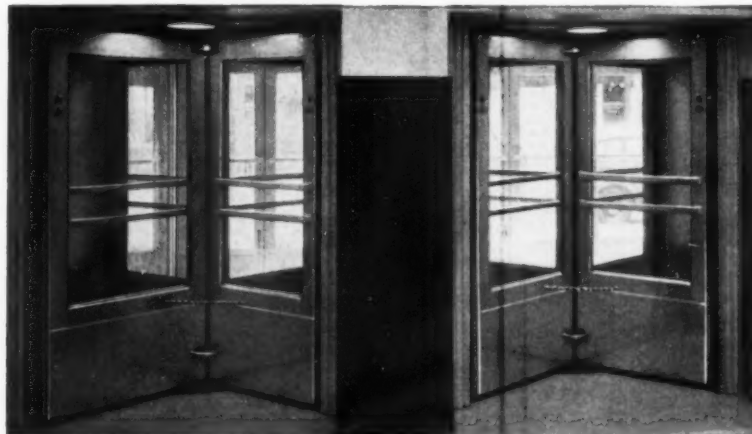
The Arrow - Hart & Hegeman Electric Co. has just introduced their new Ivorylite line to the market. As the trade name implies, ivory is the shade used. This color was chosen because it fits in with light shaded walls. The entire line of switches, receptacles and pilot or warning light combinations is made of Plaskon, the urea formaldehyde plastic, which, besides being dielectric, is impervious to chipping or discoloration.

All-Steel buys cabinet company

All-Steel-Equip Company, Inc., (Sweet's Catalog File 21/7) recently announced the acquisition by the company of the operation and management of The Aurora Metal Cabinet Company, of Aurora, Ill. This company has for many years manufactured a complete line of steel filing equipment. It was stated

REVOLVING DOORS

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GENERAL BRONZE CORPORATION



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Starrett & Van Vleck
Architects

John W. Cowper Co.
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AUTOMATIC • COLLAPSIBLE • PANIC PROOF
IN BRONZE, ALUMINUM AND STAINLESS STEEL



GENERAL BRONZE CORPORATION

LONG ISLAND CITY, NEW YORK

General Bronze Corporation also executed the
ornamental metal work in the J. N. Adam Store

that this change in no way means the elimination of the "Aurora" line from the office furniture market. All-Steel-Equip plans to continue the business aggressively.

larger plant for United Cork

Because of the demand for its process BB (Block Baked) Corkboard, United Cork Companies (Sweet's Catalog File 13/45) have started the erection of a new plant at Kearny, N. J. This patented corkboard is made in blocks, up to 36" wide, 40" long and in thicknesses of from 1" to 16", by a new

process of internal application of heat. The heat is applied to the mass of cork in such a way that avoids charring and a breaking down of the cork granules themselves. Accordingly, the cork retains much of its natural resiliency, structural strength and has a greater insulating value. It can be bent to a considerable extent to conform, without breaking, to cylindrical surfaces, thereby avoiding the use of lags on large tanks, air conditioning ducts, and the like.

(Turn to page 52 adv.)



CUTTING COSTS IN CONCRETE-FRAME ERECTION

To render a design faithfully, at minimum cost, requires maximum re-use of forms and elimination of costly delays. This is often difficult to achieve, because of the non-productive time consumed while ordinary Portland cement becomes self-supporting.

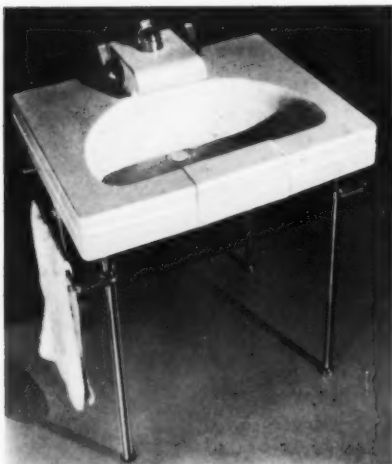
Through a basic advance in cement-making, 'Incor'* 24-Hour Cement cures or hardens thoroughly, in one-fifth the usual time. That means working strengths in 24 to 48 hours, instead of 5 to 10 days. Forms are released, ready for re-use, 4 to 8 days sooner. Form requirements are reduced, construction is simplified, non-productive time is eliminated. Substantial savings result. And these savings afford the designer greater opportunity to realize the utmost in beauty and utility within a given total cost.

For simple method of calculating savings through the use of 'Incor' on buildings of 1 to 16 stories, write for free copy of new, illustrated book, "Cutting Construction Costs." Address Lone Star Cement Corporation (subsidiary of International Cement Corporation), Room 2210, 342 Madison Avenue, New York. Illustrated above is Kavanagh Building, Buenos Aires, world's tallest reinforced concrete building—cement furnished by International's Argentine subsidiary.

*Reg. U. S. Pat. Off.

'INCOR' 24-HOUR CEMENT

MARKETING NEWS



neuvoqe bathroom equipment

A new line of fixtures was introduced by the Crane Company (Sweet's Catalog File 25/1), Chicago, at the recent National Plumbing Convention held in Buffalo. The equipment has been designed by Henry Dreyfuss.

elevators with brains

For the first time Otis Elevator Company (Sweet's Catalog File 30/8), 260 Eleventh Avenue, New York, is offering a *complete* line of both passenger and freight elevators with their control mechanism operated by buttons—"finger-tip control." These are divided into three basic types for passenger elevators (signal-control; collective-control; single-call control), and four for freight (signal-control; freight-collective; double-button and dualite control; single-call control). Each type has its special purpose, and each is designed to relieve the operator of control duties.

NEW ADDRESSES

Bryan & Sigmon Engineering Company, consulting engineers and formerly located in Loveland and Cin-



Mayfield Center Theatre, Cleveland, Ohio

A MARKED ADVANCEMENT IN STEEL ROOF DECKS

The Universal Steel Roof Deck offers you lower cost, greater strength, greater rigidity, lighter weight, quicker installation, wider purlin spacing. Says the Albert M. Higley Company, Cleveland, through P. D. Astry, Secretary:

"The metal deck which you installed on the Mayfield Center Theatre, is surprisingly rigid.

"This particular roof area with its steep surfaces, flat surfaces, ridges and hips, shows what is possible with your type of deck."

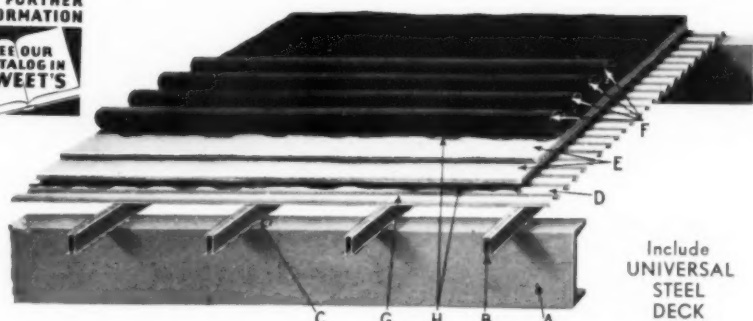
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cinnati, Ohio, announce the opening of an office in Newton Falls, Ohio. The firm offers design and supervision as well as survey and inventory services.

General Houses, Inc., has moved to new offices at 620 North Michigan Avenue, Chicago, Illinois.

Victor C. Farrar, architect, is now associated with John B. Snook Son, 299 Broadway, New York City. Mr. Farrar was formerly with Farrar, Thompson and Henry

Madel Company, New York City.

O. L. Hazelwood, architect and engineer, has opened new offices at Palestine, Texas, P.O. Box 199. Mr. Hazelwood was formerly Chief Examining Engineer, WPA District Office.

Anthony Thormin, supervising architect for the Great Lakes Exposition, announces the opening of an architectural and design office at 1227 Prospect Avenue, Cleveland, Ohio.

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STRAINS in a

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Expanding as it heats—contracting as it cools. That means constant strain on the joints of a unit heater—unless expansion is adequately provided for!

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REVIEW OF CURRENT BOOKS

• DEFINING A MUCH ABUSED TERM

GUIDE 1936 FOR HEATING, VENTILATING, AIR CONDITIONING. Volume 14. Published by American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York. Technical data section, 791 pages; Manufacturers' catalog data section, 268 pages; also roll of membership of the Society and complete indexes. Price, \$5.

CONDENSED LIST OF SOURCES OF INFORMATION ON AIR CONDITIONING. Issued (April 15, 1936) by the Electrical Division, Bureau of Foreign and Domestic Commerce, Department of Commerce, 16 pages, multigraphed. Obtainable from the Superintendent of Documents, Government Printing office, Washington, D. C.

PRACTICAL AIR CONDITIONING. By Harold L. Alt. Published by Domestic Engineering Company, 1900 Prairie Avenue, Chicago. 259 pages, illustrated with line drawings and charts. Price, \$1.

MODERN HEATING. By Harold L. Alt. Published by Domestic Engineering Company, 1900 Prairie Avenue, Chicago. 219 pages, illustrated. Price, \$1.

AIR CONDITIONING: DESIGN AND CONSTRUCTION OF DUCTS. By Thomas J. Brett. Published by American Technical Society, Chicago. 226 pages, illustrated. Price, \$2.50.

Despite the educational efforts of technicians and the more honest manufacturers, much confusion still exists in the lay mind as to the interpretation and application of the term "air conditioning."* Literally, as the Department of Commerce points out, anything which affects the atmosphere within a structure can be said to "condition" the air; for example, an electric fan, a window opener, a radiator, a pail of

water, flowers, or even perfume. These obviously cause atmospheric changes, but individually they do not perform the minimum of service which is essential for an air conditioning system to be technically acceptable.

One of the chief virtues of the annual editions of the A. S. H. V. E. Guide has been the recurrent emphasis which it has placed on the fullest possible definition of air conditioning—"the scientific preparation and simultaneous control of all the factors affecting both the physical and chemical conditions of the atmosphere within any structure." These factors include temperature, humidity, motion, distribution, dust, bacteria, odors, toxic gases and ionization.

Practical limitations make a less complete definition necessary. Since temperature, humidity and air movement are the factors which most commonly affect human comfort, their simultaneous control constitutes the minimum of service which can be labeled air conditioning, according to the A. S. H. V. E. definition. Any equipment which performs less is not an "air conditioner." Furthermore, a division into seasonal categories—summer, winter and all-year—is involved in air conditioning for human comfort.

In recent months the industry has become increasingly active in promoting the popular acceptance of these definitions and in making technical data easily accessible. The new reference list of information sources, issued by the Department of Commerce, will undoubtedly prove as advantageous for this purpose as have the preceding editions of the Bibliography of Information on Air Conditioning, from which it has been condensed, with additions and revisions. The contents include listings of government reports; trade associations and societies interested in air conditioning; trade magazines; addresses, books, pamphlets and releases on air conditioning; sources of statistical information.

Too recently published to be included in the Department of Commerce com-

pilation is *Practical Air Conditioning* by Harold L. Alt. Based on 5 years' experience in teaching the subject in the New York Evening Trade Schools, the book is full of practical problems, simply presented and explained. *Modern Heating*, by the same author, and *Air Conditioning: Design and Construction of Ducts*, by Thomas J. Brett, similarly emphasize the practical aspects involved in typical installations.

SLUMS AND HOUSING, WITH SPECIAL REFERENCE TO NEW YORK CITY: HISTORY, CONDITIONS, POLICY. By James Ford, with the collaboration of Katherine Morrow and George N. Thompson, and an appendix, mainly architectural, by I. N. Phelps-Stokes. 2 vols. Prepared and published under the auspices of the Phelps-Stokes Fund. Harvard University Press, Cambridge, Mass., 1936. Price, \$10.

A history of the housing problem in New York City, of the rise of informed opinion concerning it, of philanthropic activities toward amelioration through social agencies and through construction of model tenements, and of the administrative and legislative control measures adopted by the municipality and the state. The problem has existed apparently since the founding of the city, for it is correlated with poverty. However, although the housing of the poor has always been defective, the character of the housing itself has changed, from shacks and basements originally used as cellars to converted private dwellings and, finally, to substandard tenement houses. This change in the housing of the poor is traced almost from decade to decade, along with the economic, social, administrative and legal factors bearing on it, by means of quotations from books of travel, diaries, memoirs and other literary sources besides reports by private institutions and committees and public documents. The text is amply illustrated with maps, prints, photographs and plans.

A feature of special value to architects interested in low-rent housing is an Appendix of 105 pages by I. N.

*What the public thinks about air conditioning is indicated by a questionnaire sent to 10,000 people, the results of which have just been tabulated by the General Electric Air Conditioning Institute. The questionnaire was sent out anonymously. That the public's knowledge of all the functions of air conditioning is fragmentary; that most home owners have not yet considered it for their present homes; but that they would definitely expect it as a feature of any new home, were revelations which stand out in the results.

Only nine per cent were able to name all six functions performed by modern air conditioning. That the air is cooled was much the most frequently mentioned fact. For every 100 who specified that function, only 82 knew that it warms air, 68 knew that it dehumidifies, 65 were aware that it humidifies, 46 had the knowledge that it cleans air, and only 40 knew that it circulates air.

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Phelps Stokes, secretary of the Phelps-Stokes Fund, author of *The Iconography of Manhattan Island* (New York, 1915-28, 6 vols.) and sometime associate of John Mead Howells in the New York architectural firm of Howells & Stokes. Mr. Stokes began his study of the housing problem as a Beaux Arts student of architecture in Paris, was a member of the New York State Tenement House Commission which drafted the epoch-making Tenement House Law of 1901 under the leadership of Lawrence Veiller, and has remained in contact with the housing movement in New York City both as an architect and as a philanthropist. The Appendix shows three plans typical of converted private dwellings common before 1850. These are followed by a series of plans characteristic of the various types of tenements in use in New York City since the tenement house became the established unit for low-income families. A few multiple-family houses were erected before 1850 without, however, leaving any record of their plans. Beginning with an early example of the "rail-road" type plan, dated shortly after 1850, and ending with a typical floor plan, dated 1927, of the Lavanburg Foundation buildings, the series contains about 140 floor and plot plans. They are accompanied by descriptive and critical comment, including abridged texts of architectural competition programs from 1879 to 1934. The foregoing plans illustrate the historical section of the Appendix, entitled Part I The Past. Another informative and suggestive series illustrates Part II The Future, which contains the following among other subheads: The Present Problem; Studies in Block, Sub-Block, and Super-Block, Unit Design and Operation; Comparison of Old- and New-Type Units in Neighborhood Development.

Appearing at a time when the emergency legislation is about to expire under which the Federal government has been experimentally promoting sium clearance and construction of low-rent housing and when new policies are about to be formed, the book "will help to clarify the relative importance of the many factors which enter into the complicated and puzzling

problem of housing those families which are unable to pay rent sufficient to provide a fair return on the cost of adequate housing."

The complicated nature of the problem stands out clearly in the chapter on *Suggestions As To Future Housing Policy for New York City*, where thirty-eight recommendations are listed. The objective of the recommendations is a workable scheme of collaboration by the Federal, State and municipal governments and private capital.

The magnitude of the problem is indicated by the estimate that "from one to two million people in New York City today are dwelling under conditions in some way or another inimical to health, safety, or reasonable standards of domestic life, and that a large majority of these are dwelling in areas that can properly be designated as *slums*."

ARCHITECTURAL GRAPHIC STANDARDS. Second edition. By Charles George Ramsey and Harold Reece Sleeper. Published by John Wiley & Sons, index, covering over 3,600 items, including cross-references; 57 new plates. Price, \$6.

A new Ramsey-Sleeper has now appeared, some 22% larger than the first edition. Furthermore, 50% of the earlier plates have been changed, at least in part. As the authors explain in a preface, these additions and revisions have been made necessary by new materials, new standards and new methods introduced during the last three years. Social and economic changes are also partly responsible; for example, the repeal of Prohibition is the reason for the inclusion of information on the design of bars. Another important addition is a double-spread plate giving insulating values for different wall assemblies. Altogether, 47 new plates treat of new subjects.

Aside from a rather illogical sequence of contents—why, for instance, should a plate on "Tower Clocks and Bells" open the volume immediately ahead of "Retaining Walls"?—the book again merits praise pictorially. The graphic presentation is excellent, and the drafting technique as before will almost certainly excite admiration for its high standard.

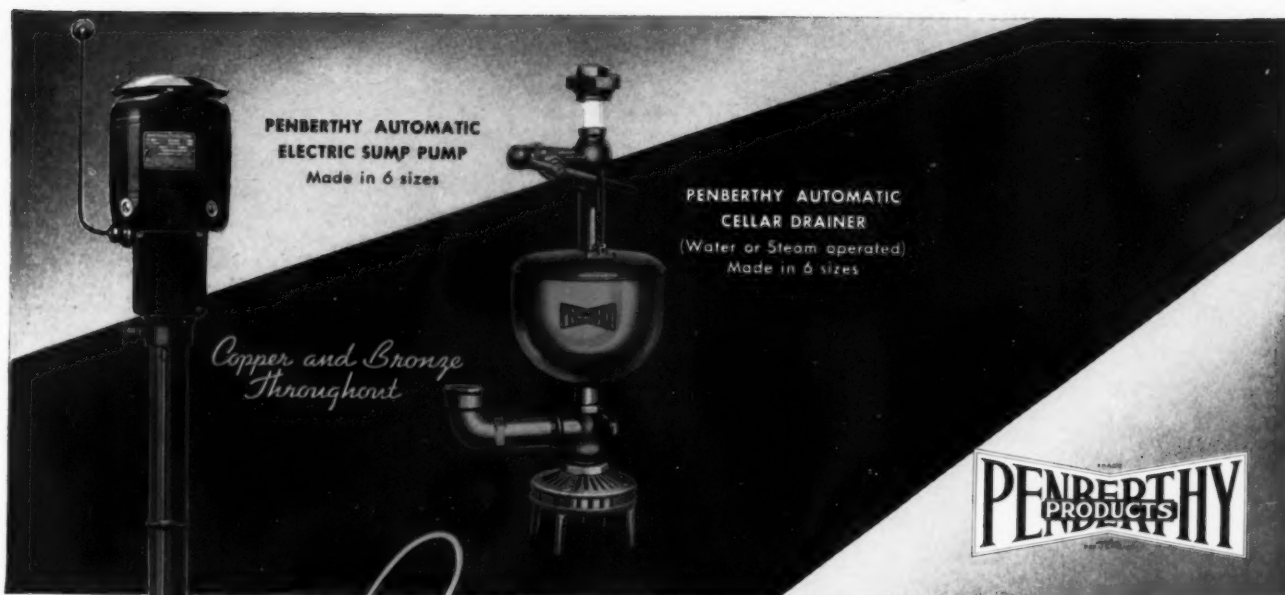
The efforts to make the plates more

complete and to bring the contents into conformity with new standards point to an intrinsic difficulty, however. The technological advances so largely responsible for the revised edition have not ceased; if anything, they are continuing at an accelerated pace. Many of the structural details in the new edition are already obviously obsolete in light of industrial possibilities. The fact that these details represent "good practice" is not an indictment of Ramsey-Sleeper but rather an index of the general backwardness of the building field.

Acceleration in technological advance implies an even more rapid turnover in technical data. In theory it might appear that revised editions of Ramsey-Sleeper would thus be required even more frequently, but actually, this is not likely. The individual architect can not be expected to absorb an increasingly more complex and more extensive store of factual matter, even when presented in simple standardized form.

The trend toward simplification in design procedure operates also in the direction of structural integration. As an increasing amount of evidence shows, the progressive manufacturers and industries are taking over the function of design in terms of structural parts and equipment. (Many of the Ramsey-Sleeper details are, in fact, based on recommendations made by manufacturers or trade associations.) At the same time, for commercial reasons, there is a shift from selling separate parts to selling complete systems. The individual architect has less and less need to bother with details when more and more whole wall assemblies, even whole room units, are made available for his specification in terms of functional performance.

The big corporations have the advantage of research facilities and organizational scope far beyond what the individual practitioner can offer; they are best qualified to study the myriad details of structural parts and systems. With this division of labor, the architect can focus his efforts on the study of living requirements and the integration of necessary structural services; he is free to design on a much broader scale than ever before.



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BUILDING CONTRACTS IN FIRST SIX MONTHS OF 1936

CHART I: Showing distribution between new and alterations, by major types.

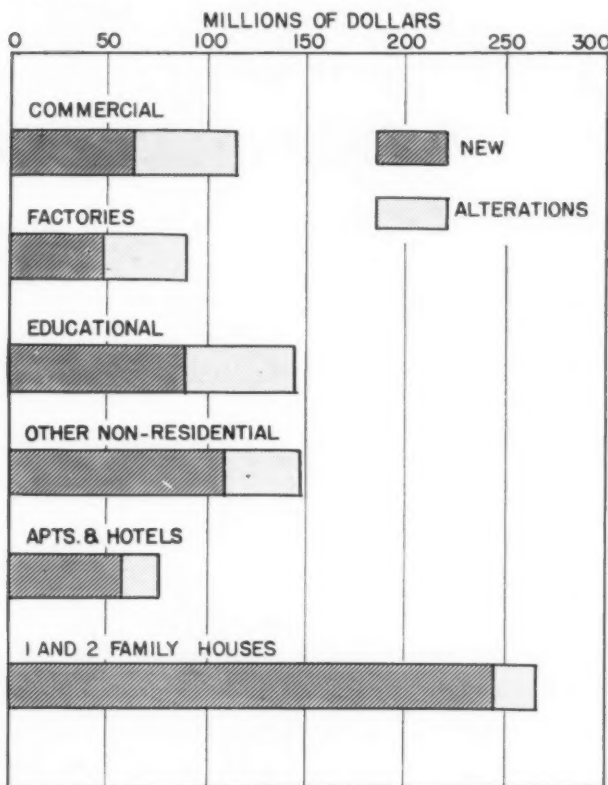
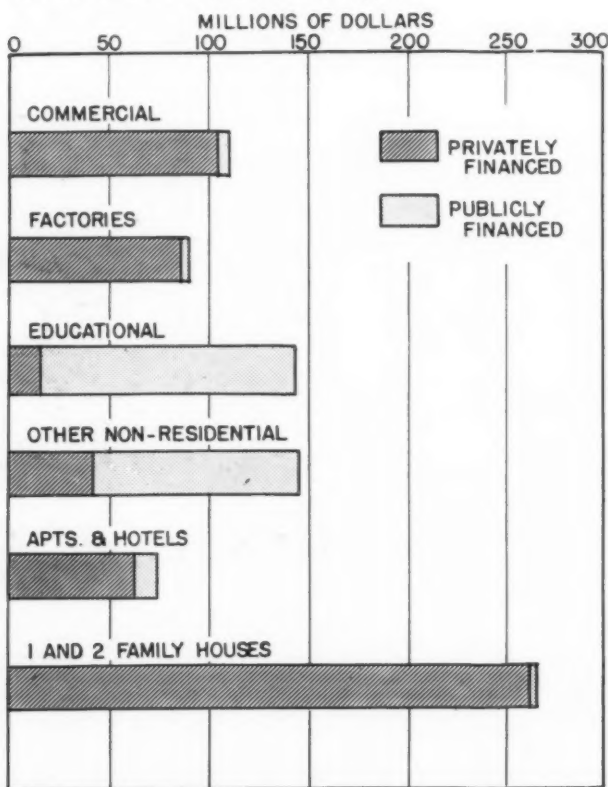


CHART II: Showing distribution between privately financed and publicly financed projects by major types.



HALF-YEAR BUILDING TOTALS ANALYZED

WITH SPECIAL REFERENCE TO ARCHITECT-PLANNED WORK

By L. SETH SCHNITMAN

Chief Statistician, F. W. Dodge Corporation

Much stress has recently been laid on the residential side of the building field—and properly. But the record for the half year discloses that, despite the large improvement in residential work, nonresidential building operations were not only almost 50 per cent greater in volume but showed a larger proportionate improvement over last year than did residential work.

At the halfway mark the 1936 building total was some 77 per cent greater in dollar volume than was shown for the first six months of 1935. Each class of building, both residential and nonresidential, shared in the general advance. For residential building the gain over 1935 has amounted to 61 per cent. For nonresidential types, as a whole, the improvement for the initial half of 1936 amounted to 90 per cent. In the residential field the gain in 1- and 2-family houses was far more pronounced than the improvement in apartments and hotels. In the nonresidential field the largest gain, both quantitative and relative, has occurred in educational building. But the most significant gains in nonresidential building, in that they represent private operations, have occurred in commercial buildings and factories.

The average value per new nonresidential building project started in the first half of 1936 was four times as large as the average value per new residential project, large and small combined. The average value per alteration to existing nonresidential buildings was more than three times as great as the average value per alteration to existing residential structures.

For commercial buildings and factories a very sizable proportion of the work during the first six months of 1936 represented alterations and additions to existing facilities. The proportion of alterations and additions for educational buildings and for other classes of nonresidential building, chiefly public and institutional, was somewhat lower than for commercial buildings and factories. For residential types, by far the largest proportion of current work has been on new structures; particularly has this been the case in 1- and 2-family houses.

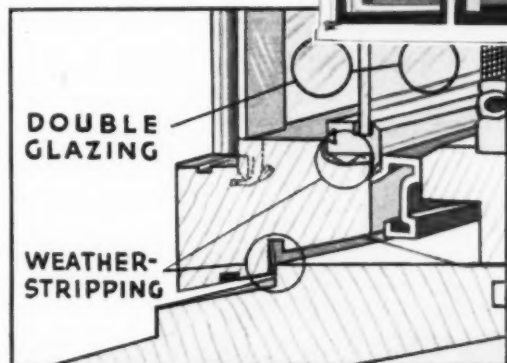
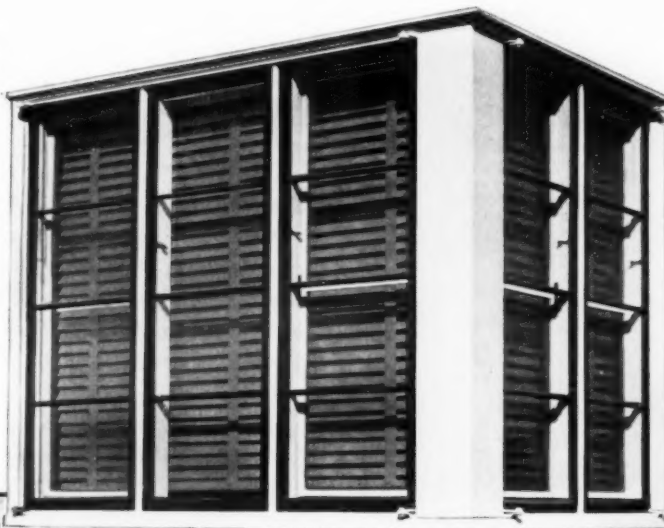
Much as public construction has been important, its significance has been overemphasized; the influence of public work has centered more largely in the engineering phases than in the building branch of the construction industry. Thus, for the initial half of 1936 only 31 per cent of all building (exclusive of civil engineering) was public while the remainder was private.

70% LESS AIR LEAKAGE . . . MEETS AIR-CONDITIONING NEEDS *Andersen* **WOOD** Casement

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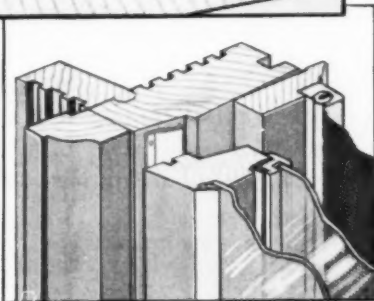
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Andersen
Catalogue
of Complete
Window Units
in SWEETS
Section 11-14.

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Casement Unit
Narrowline
Double-Hung Unit
Andersen
Basement Unit



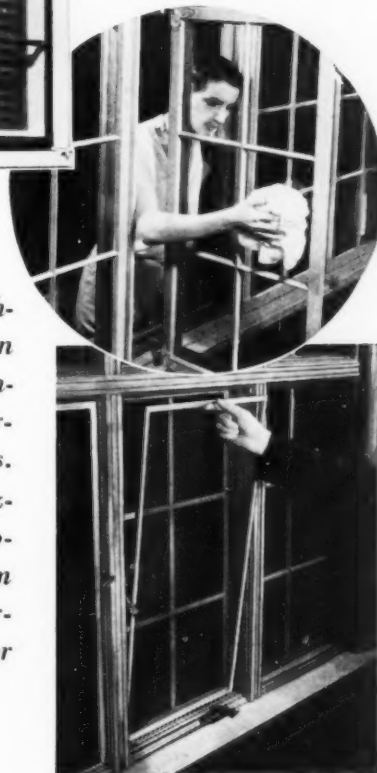
These illustrations highlight the superior Andersen construction and greater conveniences offered by factory-fitted Andersen Casements.

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ANDERSEN Units overcome objections heretofore found with both wood and metal casements.

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Bayport, Minnesota

AR96

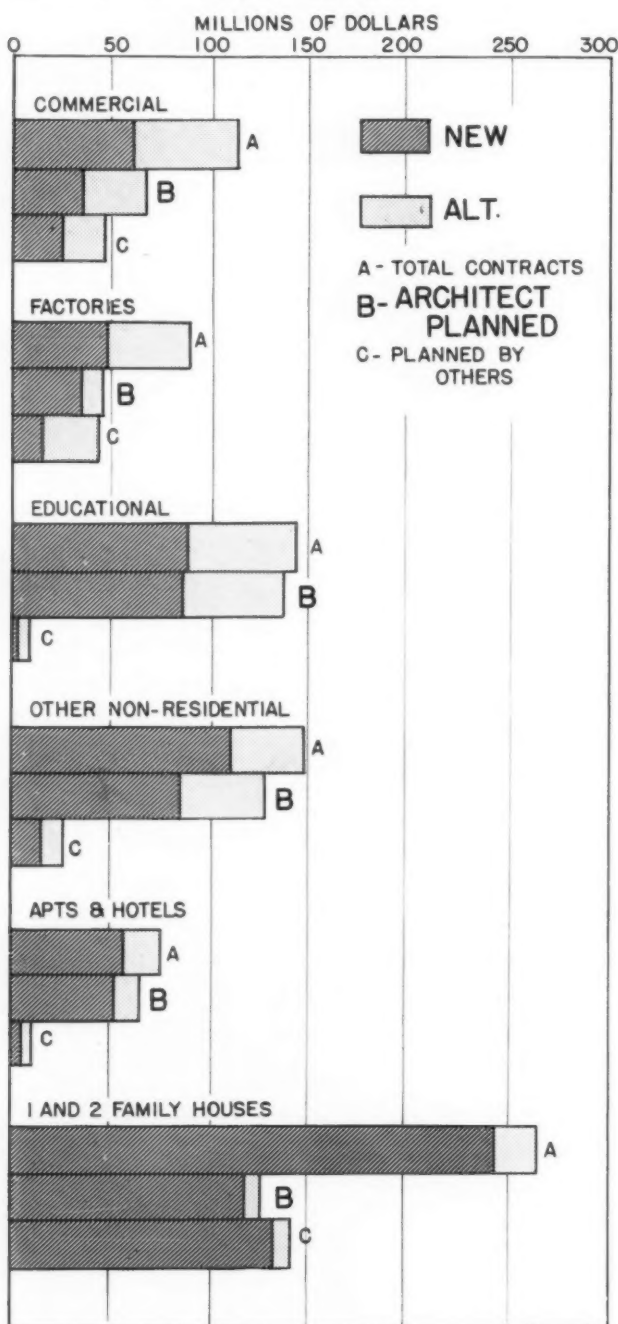
Please send complete details on:

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|---|---|
| <input type="checkbox"/> Andersen Master Frame | <input type="checkbox"/> Andersen Narrowline Unit |
| <input type="checkbox"/> Andersen Casement Unit | <input type="checkbox"/> Andersen Basement Unit |

NOTE: See your dealer for a demonstration with working models on any Andersen product—or write us.

BUILDING CONTRACTS IN FIRST SIX MONTHS OF 1936

CHART III: Showing distribution between architect and non-architect planned projects by major types.



All charts and text statements refer to data for 37 eastern states only.

There were virtually 14 private building jobs, new and alterations considered for each public job in the first half of 1936, but the average value per public project was about six times the value per private building job. Some public construction was undertaken in classes usually considered as purely private, such as warehouses, classified on the chart as commercial building, and canneries, classified as factories, but in the large the overlapping is relatively unimportant.

The architect's influence on building expands as activity in the building industry broadens. More important still, his influence increases as the average size of building project becomes larger. For the first half of 1936 the average value per architect-planned new nonresidential building project was \$61,000; this was almost five times the average size of the new nonresidential buildings planned by others than architects. In the case of alterations, the average-sized nonresidential project planned by architects was \$26,500 for the first half of 1936 as contrasted with an average of only \$10,700 for nonarchitect planned alterations to nonresidential buildings.

For apartments and hotels new architect-planned projects averaged \$81,200 as against an average of only \$20,700 for non-architect planned projects of this description. For alterations the average-sized apartment and hotel job planned by architects was \$14,700 as against only \$4,800 for nonarchitect planned projects of similar type. A significant fact is that for each 10 new nonarchitect apartment and hotel jobs there were 25 architect-planned projects of this description during the first half of 1936. For all other classes charted, except 1- and 2-family houses, the architect's influence has similarly exceeded the importance of nonarchitects by substantial amounts.

Of all new nonresidential building undertaken in the initial half of 1936, 81 per cent of the total value was architect-planned; the remaining 19 per cent being nonarchitect planned covered about half the total number of all projects. Architect-planned alterations to existing nonresidential structures accounted for 65 per cent of the total value of all nonresidential alterations during the first half of 1936.

In the case of new apartments and hotels the architect accounted for 91 per cent of the total value of such building thus far in 1936, while as to alterations to existing apartments and hotels architect-planned projects represented about 50 per cent of the total value of such jobs. Even in 1- and 2-family houses which in aggregate value were much lower than nonresidential building, the architect accounted for almost 47 per cent of the total value of new building in the first six months of the current year.

NEW BOOKLETS & BULLETINS

In writing to manufacturers for any of the new catalogs or booklets listed in this column, mention of **The Architectural Record** will be greatly appreciated.

BUILDING MATERIALS

Genasco Shingles, Sidings and Roofings. The Barber Asphalt Company, 1600 Arch Street, Philadelphia, Pa.*
Acoustic "Heerwagen-Tile." Heerwagen Acoustic Decoration Co., Fayetteville, Ark.
Asbestos Bonded Armco Pipe. The Shelt Co., Box 609, Elmira, N. Y.
Nailcrete, The Original Nailing Concrete. The Nailcrete Corporation, 105 West 40 Street, New York.*

BUILDING EQUIPMENT

Bathe-Rite Shower Cabinets. Milwaukee Stamping Company, Milwaukee, Wis.*
Architect's Specifications for Warner's All-Steel and Iron Standard Sidewalk Elevators. The Warner Elevator Mfg. Co., Cincinnati, Ohio.*
Steel Equipment for Improved Handling and Storage. All-Steel-Equip Company, Inc., Aurora, Illinois.*
Engineering Pointers on the Application, Selection, Installation of Totally Enclosed Fan Cooled Motors. The Lincoln Electric Co., Cleveland, Ohio.
Super-Seal, A New "John Crane" Anti-Frictional, Dry-Graphite Lubricated Plastic Packing. Crane Packing Company, 1800 Cuyler Avenue, Chicago, Ill.

FURNITURE

Office Copy of Modern Style Book. Herman Miller Furniture Company, Zeeland, Mich.

WELDING

Lower Piping Costs With Shielded Arc Welding. Lincoln Electric Co., Cleveland, Ohio.

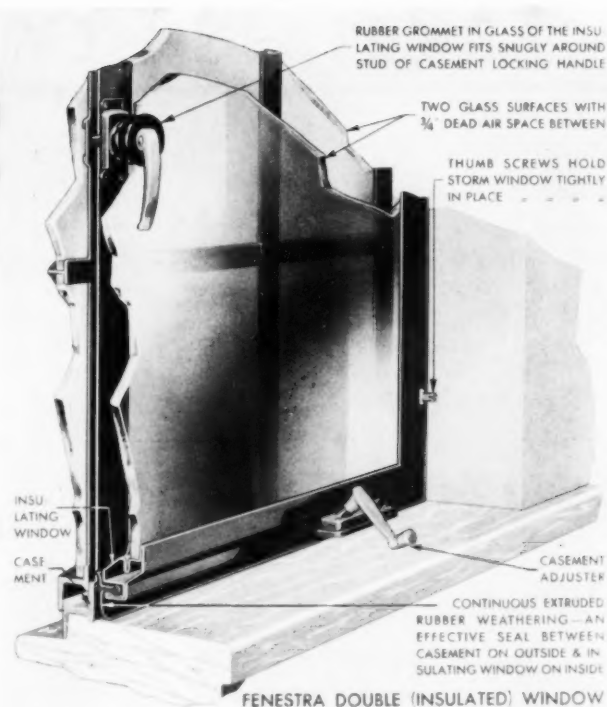
AUTOMATIC CONTROLS

Thyratron-Reactor Control. General Electric Company, Schenectady, N. Y.*
Illumination Control. Weston Electrical Instrument Corporation, Newark, N. J.

HEATING, PIPING, AIR CONDITIONING

Progress in Air Conditioning in the Last Quarter Century, by Willis H. Carrier, Chairman of the Board. . . . **Portable Summer Air Conditioner.** Carrier Engineering Corporation, 850 Frelinghuysen Avenue, Newark, N. J.*
Ilgair Air Conditioning and Cooling Equipment, Catalog No. 436. . . . **Simple Instructions for Estimating Ilg-Kold Cooling Systems,** Catalog No. 436A. . . . **Propeller Fans and Blowers for Ventilation and Air Conditioning,** Catalog No. FB-45. Ilg Electric Ventilating Co., 2850 N. Crawford Avenue, Chicago, Ill.*
New Unit Heater, Bulletin No. 836. Modine Manufacturing Company, Racine, Wis.
Master Kraft Conditioned Warm Air Heating Unit. Harvey-Whipple Incorporated, 55 Emery Street, Springfield, Mass.
Steel Boilers, Catalog No. 80. Kewanee Boiler Corporation, Kewanee, Ill.*
"Afco" Air-Stream Oil Burning Unit, Bulletin No. 115-C. American Furnace Company, St. Louis, Mo.
Jacketed Cast Iron Oil Heating Boiler, Series 018. National Radiator Corporation, 221 Central Avenue, Johnstown, Pa.
Cast Iron Oil-Heating Boilers, Series D18. National Radiator Corporation, Johnstown, Pa.
CE-Skelly Stoker Unit. Combustion Engineering Company, Inc., 200 Madison Avenue, New York.*
Automatic Heat by Finger Tip Control, Bulletin 16-B-36. Anchor Stove & Range Co., Inc., New Albany, Ind.
Arcoley Range Boiler and Tank. . . . Arco Floor and Ceiling Plate for Copper Pipe. American Radiator Company, 40 West 40 Street, New York.*
Ammonia Valves and Fittings, Catalog H. Frick Company (Incorporated), Waynesboro, Pa.

* See other information in Sweet's Catalog File.



INSULATE YOUR WINDOWS as well as your walls

Modern ideas of winter comfort and fuel economy demand that houses have insulated windows as well as insulated walls. Double glass with at least $\frac{3}{4}$ " of dead air space between the panes is the best window insulation yet devised.

That's why Fenestra Inside Insulating Windows applied to Fenestra Steel Casements are arousing such widespread interest.

They eliminate condensation and frost under all ordinary conditions (70° inside temperature, 45% relative humidity, 5° below zero outside temperature). They reduce heat loss through windows 60%. They save fuel. Put them on, quickly...from the inside...when the screens come off in the fall. Remove them any time with ease and safety for washing or storage.

Specify that all Fenestra Steel Casements you are buying now shall be equipped for Inside Insulating Windows. You can get the Insulating Windows themselves any time later.

DETROIT STEEL PRODUCTS COMPANY
2256 East Grand Blvd. • Detroit, Michigan

Fenestra

MARKETING NEWS OF THE BUILDING INDUSTRY

Carrier home air conditioners

Sizes, combinations, and capacities for the new Carrier residential air conditioning and automatic heating equipments, and for the oil burner, have been announced by Carrier Engineering Corporation (Sweet's Catalog File 26/3), New-

ark, N. J. Two sizes of the Carrier Home Air Conditioner are introduced complete, with either oil or gas furnace, and for winter and year 'round service. Maximum ratings are 190,000 B.t.u. per hour and 323,000 B.t.u. respectively, for oil; 150,000 B.t.u. per hour and 260,000 B.t.u. for gas. Because of the unit design of the furnace and

air conditioner, the required floor space for the two sizes is only 27 by 46 inches, and 27 by 67 inches, respectively.

Gar Wood gas-fired unit

The air conditioning division of Gar Wood Industries, Inc. (Sweet's Catalog File 26/20), Detroit, is marketing a new automatic heat and air conditioning system which is fired by gas. Heretofore, all Gar Wood heating and air conditioning units have been designed exclusively for the use of fuel oil. The exterior appearance of this new unit is similar to that of the Tempered-Aire model.

oil-firing boiler

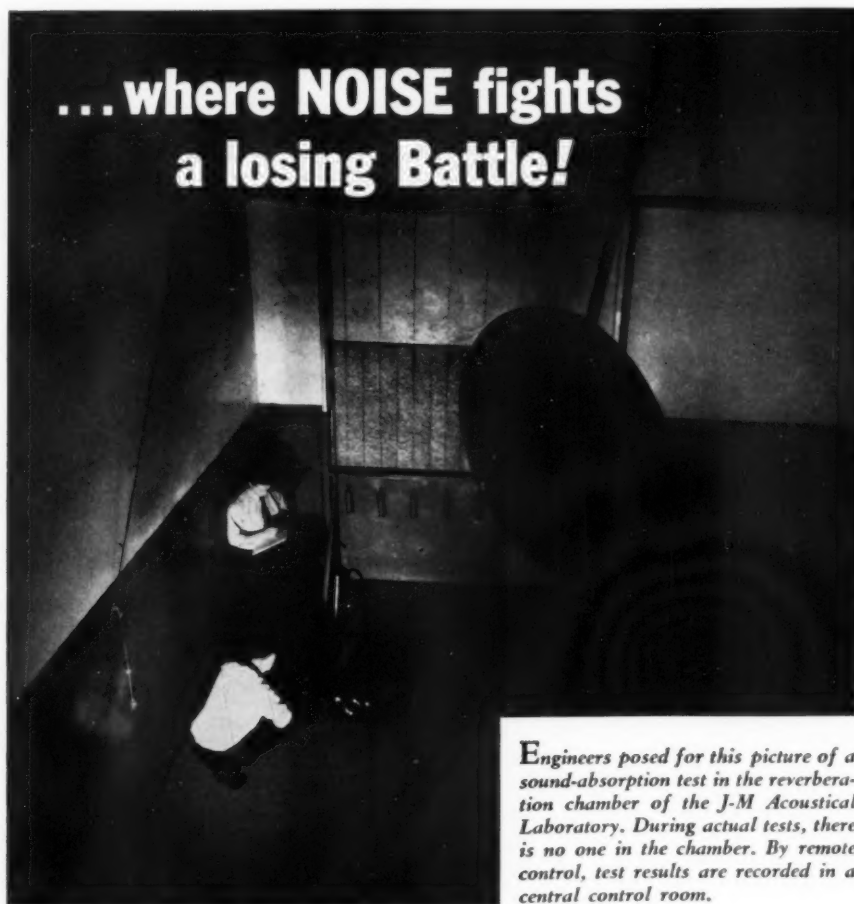
A new vertical steel boiler designed for oil firing has been announced by the National Radiator Corporation, Johnstown, Pa. The boiler is made in 23" and 26" diameters with S. H. B. I. steam ratings of 540 and 680 sq. ft. and water ratings of 860 and 1,090 sq. ft. respectively. The boilers are furnished with a standard jacket or with a front extension to inclose gun-type burners and other controls. Both styles of jackets are furnished in French gray baked enamel with aluminum trimmings.

Anchor-Arco kolstoker

Two companies, the American Radiator Company of New York, and the Anchor Stove and Range Company of New Albany, Indiana, announce that together they have designed and perfected the Anchor-Arco Kolstoker-Boiler Unit. This new unit is in itself a complete automatic heating plant with the functions of the Anchor Kolstoker and the Arco Boiler coordinated for maximum efficiency in the feeding and burning of coal, and the conversion of heat energy into steam or hot water heat.

unit cooler

A new cold-water type unit cooler has been placed on the market by the Modine Manufacturing Company, Racine, Wisconsin. Suspended in a room, it is equipped with a motor and fan which draws the room



Engineers posed for this picture of a sound-absorption test in the reverberation chamber of the J-M Acoustical Laboratory. During actual tests, there is no one in the chamber. By remote control, test results are recorded in a central control room.

TYPICAL of the exhaustive research carried on at the J-M Acoustical Laboratory is the test pictured above. It is by experimental work such as this that sound control has progressed from the pioneer stage to an exact science. Today, J-M Sound-Control Materials, and the experience gained by J-M Engineers in their development, provide the solution for your own specific acoustical problems.

The interesting story of research in sound control at Johns-Manville is told in our booklet, "Noise Fighters." For your copy, address Johns-Manville, 22 East 40th Street, New York City.

Johns-Manville
SOUND-CONTROL MATERIALS AND ACOUSTICAL ENGINEERING SERVICE

BUILD YEAR 'ROUND COMFORT INTO HOMES... BUILDINGS

Give Owners the Economy Features of RED TOP INSULATING WOOL



■ For the architect Red Top Insulating Wool comes very close to being the perfect insulation. It combines tremendous efficiency with low cost... lets the architect get the results he knows are best at a price the client can pay. A four-inch thickness has eight to ten times the efficiency of typical half-inch insulations. And the cost installed is low, so low that Red Top soon pays for itself in fuel saved.

FIREPROOF PERMANENT. There is no other insulation quite like Red Top Wool. It is unique in its light weight... only eight ounces per square foot four inches thick... in its life, its resiliency and in its clean white appearance. Red Top stays in place to give long and efficient service. It is genuine wool, made of long staple fiber free from shot and other non-insulating impurities. It is fireproof, vermin proof, permanent.

A PRACTICAL INSULATION. Not a one purpose insulation, Red Top helps to solve many problems... insulation of the new home, reconditioning the old home, economical use of automatic heat, reduction of fuel costs in homes expensive to heat and always the achievement of comfort summer and winter.



SPECIAL TYPES. Red Top is now made in new special types with special advantages. Red Top Strip Wool... nine-foot strips that fit snugly between studs, ceiling to floor. Each has a face of tough waterproof paper with a flanged edge for nailing to studs or rafters. Red Top Bat Wool also has the same waterproof paper face with flanged nailing edges.

COMPLETE SPECIFICATION DATA. Send for specification book pictured below. Bat Wool, Strip Wool, Junior Bat Wool, Nodulated and Granulated Wool are all described and a specification is provided for each. You will find this a handy manual and a practical reference source on insulating wool. Send for your copy today.

UNITED STATES GYPSUM COMPANY AR-9
300 West Adams Street, Chicago, Illinois
Please send me, free of charge, a copy of USG
Red Top Insulating Wool Specification Book.

Name

Address

City State



UNITED STATES GYPSUM COMPANY

NEWS of the BUILDING INDUSTRY

air through the unit, absorbing heat and moisture and returning cooled and freshened air into the room. The units may also be used to provide circulation of air only on days when the cooling operation is not considered essential.

new cap molding

Pyramid Metals Company, 455 North Oakley Boulevard, Chicago, Illinois, manufacturers of Stainless Steel Mouldings, announces a new cap molding for covering the edges of wallboard, tile, etc. Information is available from the manufacturer.

new all-metal door

The Kinnear Mfg. Company (Sweet's Catalog File 10/22), 115 Fields Avenue, Columbus, Ohio, recently announced a new all-metal sectional upward-acting door, trade-named *All-Steel RoL-TOP*. A heavy roll on the edge of each section provides a continuous smooth operating interlocking hinge and also serves as reinforcement against deflection or possible warpage. Operating on ball-bearing rollers traveling in steel vertical and horizontal tracks the door raises easily up, over and back, being counterbalanced by means of two matched tension springs that lay parallel to the horizontal tracks. Vertical tracks are mounted on a continuous

angle assembly to which an adjustable sloping metal weatherstrip is attached; this strip engages the end of the door, which is also graduated, forming a "keystone" sealing arrangement. This new door is built in any size and arranged for simple installation in old or new buildings.

new building cleaner

Homestead Valve Manufacturing Company, Coraopolis, Pa., announces a new heavy-duty cleaning unit, to be known as Model E Hypressure Jenny. In use this model utilizes the combined advantage for cleaning of a mixture of vapor, hot water, soap or a selected chemical, and pressure. The unit, being fully contained, carries its own fuel tank, water and solution tanks, oil burner, and vapor generator. It does not require the services of a licensed engineer or a skilled mechanic. All that is needed to place it in operation is a line to the water tank and an electric connection. The whole unit is set in motion by an electric switch. Water and solution are pumped from their respective tanks and automatically mixed to a predetermined proportion en route to the generator coils, where the solution is heated. By turning a valve on the cleaning gun, a vapor spray emerges from its nozzle with great velocity. This velocity, combined with the reaction of the heated cleaning solution, breaks up the accumulation of grease, dirt, or whatever material is being removed. The flushing action of the spray washes away the loosened accumulation.



We're sticking to our same old way of making ink, for fifty years experience has taught us that a finer ink than Higgins just can't be made. But since we're modern enough to keep seeking improvement—we've redesigned the bottle. • You'll find the new Higgins bottle trimmer, more graceful—easier to cork and uncork with one hand. Moderns and conservatives alike are hailing it, for it's little touches like this, combined with the unchanging superiority of the ink, that makes Higgins the standard of the world.

CHAS. M. HIGGINS & CO., INC. • 271 NINTH STREET, BROOKLYN, N. Y.

HIGGINS

The Horse Trader LOOKS AT THE HORSE

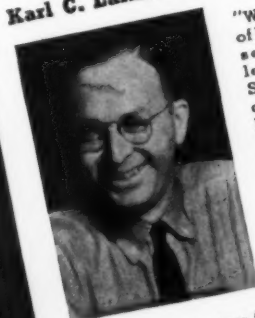


**Take No Chances When You Choose
UNIT HEATERS!**

LOOK BEFORE YOU BUY—Select Unit Heaters as you would any important equipment. Look before you buy . . . compare carefully. It's good business for you and it's good business for us, too. Only by comparison can you realize the marked superiority of American Blower Venturafin and Sirocco Unit Heaters, and only by insisting on American Blower Units will you get all the economies and advantages that can be yours. When planning heating equipment for your present building, new building or when modernizing existing heating systems, be sure to ask your architect or contractor for American Blower Unit Heaters. He'll give you all the facts and he'll make it possible for you to see what you're getting, buying and know what you're getting.



Sirocco Unit Heaters

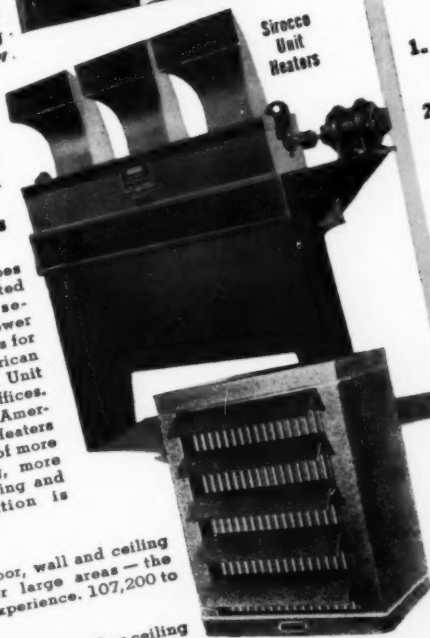


Karl C. Lambert, plant manager, says

"We looked at all types of Unit Heaters and tested several before we selected American Blower Sirocco Unit Heaters for our plant and American Blower Venturafin Unit Heaters for our offices. The difference our American Blower Unit Heaters make in the way of more efficient heating, more economical heating and quieter operation is amazing."

Sirocco Unit Heaters (center right) for floor, wall and ceiling installation — particularly adaptable for large areas — the result of fifty-one years' engineering experience. 107,200 to 1,267,500 B. T. U. per hr.

Venturafin Unit Heaters (bottom right) for floor, wall or ceiling installations in offices, stores, garages, industrial, etc. 21,000 to 471,500 B. T. U. per hr.



Venturafin Unit Heaters

**BUY AMERICAN BLOWER UNIT
HEATERS AND GET THESE
ADVANTAGES . . .**

1. Quieter operation assured by streamline inlets and spring suspension motor mountings. All Venturafin units are rated in decibels for sound.
2. New standards of efficiency, 10 to 64% more heat, 4 to 45% more air, with no increase in horsepower. Tested under A. S. H. & V. E. standard test code.
3. Strong, rugged heating elements with cast bronze headers insure years of dependable service.
4. Trouble-free operation with brushless type, totally enclosed, quiet operating motors.
5. New beauty of design — styled by leading industrial designers.
6. The most complete line of Unit Heaters in the world to select from (two types — Venturafin and Sirocco). All units scientifically designed, engineered and guaranteed by American Blower, a division of American Radiator and Standard Sanitary Corporation — the world's best known manufacturer of heating equipment.
7. Over 100,000 American Blower Units in use, heating more than 300 million square feet of floor space.

MAKE THIS TEST — Let us send you a Venturafin Unit Heater for a 10-day comparison test. There's no obligation. We'll pay the freight both ways — you be the judge.

AMERICAN BLOWER CORPORATION
DETROIT, MICHIGAN

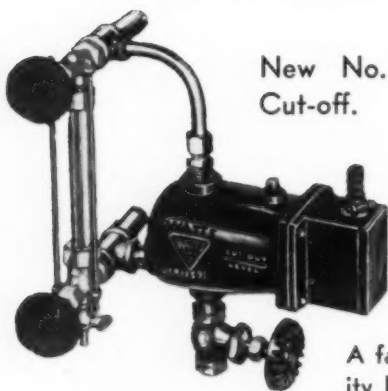
☐ Please send Data on Unit Heaters
☐ Please send Unit Heater for comparison to

NAME _____
ADDRESS _____
CITY _____ STATE _____

**MAKE A COMPARISON TEST
MAIL THE COUPON**

FORCED HEAT

DEMANDS WATTS PROTECTION !



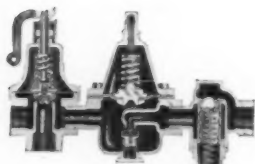
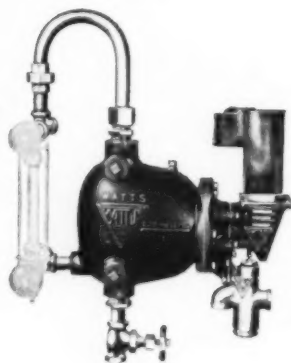
New No. 94 Low Water Cut-off.

A novel type design. Built of composition BRONZE. Compact; efficient; simple to install. Positive in action.

A favorably priced, quality built unit.

**No. 60-LW (Right)
Boiler Water Feeder
and Low Water Cut-off.**

For boilers up to 5000 sq. ft. Maximum steam pressure 25 lbs.



**No. 38 (Left)
Hot Water Heating
Regulator Unit.**

A superlative unit for automatically supplying water to the system and providing excess pressure relief. Other type units are manufactured, also complete tank systems.

WATTS manufactures a COMPLETE LINE

PRESSURE, TEMPERATURE AND VACUUM RELIEF VALVES; REDUCING VALVES; FEEDERS; LOW WATER CUT-OFFS; CIRCULATORS

For efficiency and service specify a Watts unit.

Reference pages
in SWEET'S
1937 Architectural
Catalogue

WATTS
REGULATOR COMPANY
Lawrence, Mass.

REPRESENTATIVES IN ALL PRINCIPLE CITIES

NEWS of the BUILDING INDUSTRY

paint cleaner

A new paint cleaner called "Cleanbrite" has been introduced by Flexrock Company, 800 N. Delaware Avenue, Philadelphia. It not only removes dirt but brings the painted surface up to its original brightness, according to claims.

new radiator valves

The American Radiator Company has announced the development of a new radiator vent valve, with adjustable vent port for balancing the distribution of heat throughout the house, and a new quick vent valve for rapid venting of steam mains. Both the radiator and main vent valves are made for either one pipe steam or vacuum systems. The new valves, when used together as a team, provide for quick and even distribution of heat. By setting the valves of the radiators nearest the boiler so that they vent air slowly, and by opening the valves on the radiators at a more distant point from the boiler, and increasing this opening as the distance increases, so that they vent air more quickly, all radiators are filled simultaneously with their quota of steam and heat is evenly distributed to all rooms. The quick vent valve on the end of the steam main allows steam to be supplied almost instantly to the riser connections leading to the more remote radiators as well as the ones adjacent to the boiler.

American Radiator Company also announces the development of "balancing" elbows and "tight-close" radiator valves that permit the same adjustable control over hot-water systems that is incorporated in the company's new one- and two-pipe steam systems. The "balancing" elbows, made in $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " sizes for radiator return connections, make it possible to provide the correct flow of water to each radiator after installation on either gravity or forced circulation jobs.

anti-frictional plastic packing

A general, all-service plastic packing with a new anti-frictional, dry-graphite lubrication is announced by the Crane Packing Company, 1809B Cuyler Avenue, Chicago. Tests have shown that this new product, which bears the trade name "Super-Seal," provides a permanent anti-frictional seal. It is resilient and there is no tendency to harden or dry out. It flows readily under gland pressure, which makes it very easy to adapt to smaller or larger packing spaces.

"Super-Seal" is engineered for all-around packing service in power plants, refineries, chemical plants, the process industries, paper mills, for marine service and industrial works of all kinds. It is put up in six convenient forms: valve stem (round), spiral form (rectangular), coil form (square), bulk form (for emergency use), ring form (split), production sets (endless).

foam-making water nozzle

A new method, mechanical rather than chemical, of making foam for fighting flammable liquid fires and suitable for use with long or short lines of $\frac{3}{4}$ " to $2\frac{1}{2}$ "



**WHAT STEEL MEANS
TO SKYSCRAPERS
PITCH-AND-FELT MEANS
TO FLAT ROOFS**

Steel made possible the construction of skyscrapers... Coal tar pitch-and-felt made possible the construction of flat bituminous roofs that have lasted 20, 30 and even 40 years.

There are good reasons for this long life:

- 1.** Coal tar pitch is waterproof.
- 2.** Coal tar pitch roofs have self-healing and self-sealing characteristics.

KOPPERS PRODUCTS CO.
KOPPERS BUILDING, PITTSBURGH



You should specify coal tar products for roofing, just as you specify copper for plumbing and hardwood for flooring.

Specify Koppers Coal Tar Pitch and Koppers Tar-Saturated Felt.



Koppers Products Company, Pittsburgh, Pa.

AR-5

Send me ☐ Roof Specifications Book

- ☐ Don Graf Data Sheets on Roofing and Waterproofing
☐ Information on Lumino Aluminum Tar-Base Paints
☐ Creosote for Wood Preservation and Termite Prevention

Your Name.....

Firm Name.....

Address.....



House in Burlingame, Calif., painted with Cabot's DOUBLE-WHITE. Hall and Proetz, and William W. Wurster, Associated Architects.

When you want a WHITER Shade of White

Architects have been quick to discover that Cabot's DOUBLE-WHITE is two or three times whiter than other white paints. They have also been quick to discover that *its whiteness lasts*. . . This is because the carefully chosen pigments in Cabot's Collopakes are chemically inert. They are immune to the reaction with atmospheric gases which discolors the pigment in many white paints. Furthermore, Cabot's DOUBLE-WHITE gives a smoother coat, thanks to the patented Collopaking process which divides the pigments hundreds of times finer than ordinary grinding methods. DOUBLE-WHITE leaves no brush marks to collect dirt and grime. . . For further information mail coupon below for *The White Book*, showing photographs of many houses finished with Cabot's DOUBLE-WHITE and the texture-revealing *Old Virginia White*.

Cabot's **DOUBLE-WHITE** and Gloss Collopakes

Samuel Cabot, Inc.
141 Milk Street
Boston, Mass.

Samuel Cabot
Inc.
Manufacturing Chemists

Gentlemen: Please send me *The White Book* and full information about Cabot's DOUBLE-WHITE and *Old Virginia White*.

Name

Address AR-9-36

NEWS of the BUILDING INDUSTRY

hose has been announced by the Pyrene Manufacturing Company, Newark, N. J. A water stream is converted into a continuous foam stream by coupling a nozzle, known as the Phomaire Play Pipe, to a water line supplying 75 pounds or more pressure at the play pipe. As the water passes through the play pipe, Phomaire (a new foam-making solution carried by the operator in a hip pack) and air are automatically drawn into the water stream in the proper proportions to form foam. There are no moving parts. Only one person is required at the play pipe.

improved expansion bolt

A new improved expansion bolt which assures holding power up to the breaking point of the bolt has been developed by combining the strength of steel and the flowing and gripping properties of lead. Developed for extreme loads, these bolts can not work loose because the anchorage material is lead, a dead metal, which absorbs vibrations, is soft, and doesn't crush or break down the masonry; whereas hard metal-to-masonry anchorage crushes or transmits vibrations to the masonry.

The bolt itself is steel and has a thin, steel-cone jacket under the bolt head, with a lead jacket on the outside. Called the *Life-Time Expansion Bolt*, it is packed in a convenient package with setting tool. The bolt is stocked in sizes of 1/4" to 1/2" diameter and 1 1/2" to 8" long; finished in plain, cadmium, or hot galvanized. Special sizes are furnished on order. It is manufactured by the Chicago Expansion Bolt Company, Room 604/26 South Clinton Street, Chicago.

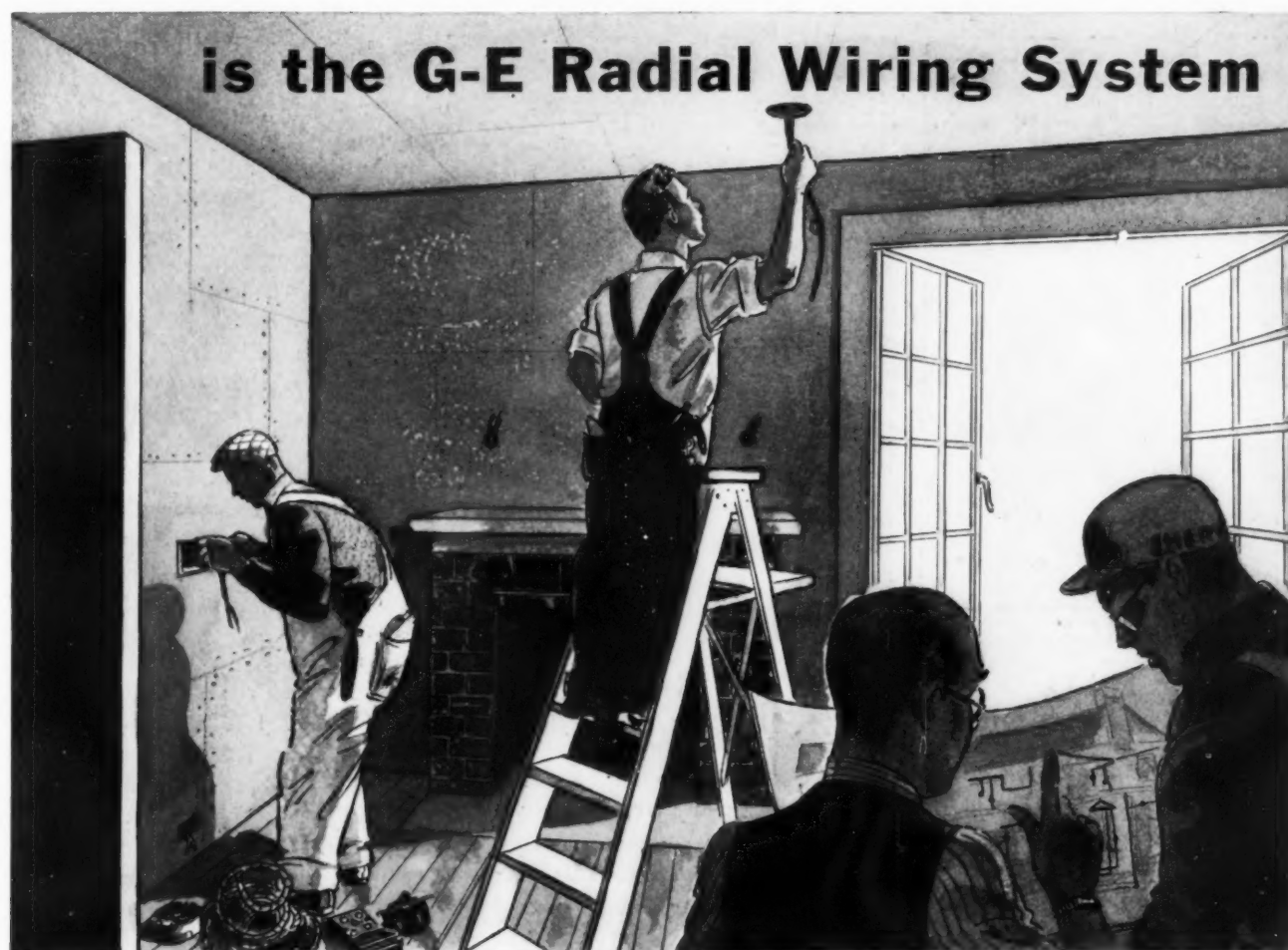
electric range for apartments

A new apartment house electric range, known as "The Mate," has been announced by the Appliance and Merchandise Department of General Electric Company (Sweet's Catalog File 22/27). The range is 20 15/16" wide and 24 3/32" in depth, making it suitable for the small apartment. The cooking top is 36" from the floor. Oven is equipped with two sliding shelves and hydraulic-type oven temperature control; a porcelain enamel broiler pan with wire rack is included. Standard equipment includes three Hi-Speed Calrod units. "The Mate" is approved by the underwriters for installation with the back flush against the rear wall and may be installed with sides flush against adjacent metal cabinets.

milcor steel company

Announcement is made of the appointment of Mr. Earl A. Tanner as General Sales Manager of the Milcor Steel Company, Milwaukee, Wis. For the past six years Mr. Tanner has been General Manager of the company's eastern plant at Canton, Ohio. His new duties as General Sales Manager will include supervision of sales for the five Milcor plants. His headquarters will be at Milwaukee.

THE REAL BEGINNING OF A HOME



Whether mansion or cottage, the installation of the wiring system marks the real beginning of a modern home. On it depends the home's convenience and comfort, economy and safety.

To make them available to every home, General Electric designed the Radial Wiring System. From the hundreds of installations in G-E "New American" Homes, its value has been proved. Your clients after reading about and visiting such model dwellings, demand all-electric homes. And they are possible only if the wiring system is adequate.

The G-E Radial Wiring System is adequate . . . adequate in copper sizes, number of circuits, switches and convenience outlets. It is easy to specify and install. This wiring system assures efficient operation of all appliances. For complete details refer to "Sweet's 1936 Catalog" or "American Architect Time Saver Standards"; or write for "The G-E Radial Wiring System Reference Manual For Architects." Address Section CDW-909, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

WIRING MATERIALS

APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONN.

REVIEWS OF CURRENT . . . BOOKS



FHA says: "This is bad this is better."

PLANNING NEIGHBORHOODS FOR SMALL HOUSES: *Technical Bulletin No. 5. Federal Housing Administration, Washington, D. C.*

In the three years of its existence, FHA has published many treatises on various financial problems in the speculative housing field. Latterly, however, it has given increased attention to the technical aspects of physical planning. This took the form of several detailed studies of the small house structure and, now, of the neighborhood of small houses.

Reflecting the planning practices as developed by the better subdividers, *Bulletin No. 5* points out the necessity of a planned neighborhood as the guarantee "and final source" of stable values. It attempts to codify the general principles of neighborhood planning and deals with the design factor at some length. Analyzing neighborhoods *by type*, it comes to the conclusion that low-cost neighborhoods fall into three categories—"(1) grouped or attached housing; (2) detached single-family dwellings; (3) garden (or subsistence) homesteads." It recommends that these categories should not be mixed in any given project, as homogeneity is an important element in neighborhood planning.

Since *Bulletin No. 5* is designed for projects which will be sold—not rented—it closes, appropriately enough, with model deed restrictions.

THE EVOLVING HOUSE, VOLUME III. RATIONAL DESIGN.

By Albert Farwell Bemis. *Supplemented with a Survey of Efforts to Bring House Structure Up-to-Date*, by John Burchard, 2d. The Technology Press, Massachusetts Institute of Technology, Cambridge, Mass. 625 pages, extensively illustrated with diagrammatical drawings. Price, \$4.

The Evolving House series, beginning with primitive shelter of early

ages and its development until the present day, devotes its third volume to Rationalization of Housing and Prefabrication. It is a scholarly book, reliable in its facts and exhaustive in its use of scientific research.

The author believes that only a new conception of structural design can satisfy the terms of the present economy, a conception that meets the requirements of modern engineering and industry. These requirements include mass production, speedy assembly, sci-

entific and social efficiency, and facile marketing.

A thorough study and analysis of existing house types in the United States shows that rectangular plan layouts are predominant and that such layouts favor standardization and mass production of house parts. Rather than to standardize the complete house, an attempt should be made to create uniform and interchangeable building elements which will permit a variety of designs in plan and elevation, according to Mr. Bemis. An interchangeable unit in the shape of a cube was found to be the basic measure suited to the uniform and repetitive features existing in mass production. The 4" cube was selected as module for the structural parts of houses, because of its relation to existing construction such as 4" wood frame and 8" masonry walls. Limitations of the machine also favored this dimension. The new house designs are therefore laid out within a cubical matrix built up of 4" cubes.

At this point the proposed system of standardization loses some of its practicability. As no attempt is made to establish a few units for walls, floors, windows, and doors, we must assume that parts are to be produced in sizes of 4" intervals or multiples. In order to carry out this principle on, for instance, the average small house of, say, an over-all dimension of 25 ft. x 30 ft. x 20 ft. high, the necessary matrix would contain a total of 405,000 4" cubes and the same number of individual building parts would be required to compose various house designs.

Such a tremendous number of pieces, multiplied by the different materials to serve as walls, floors, windows, and to suit local conditions, makes any economical rationalization impossible. Out of this, however, may come the method for economically producing house parts. Standardization of larger-sized wall, floor, window and door units, based on the physical human scale and the properties of modern materials instead of on dimensions

(Turn to page 32 adv.)

WELCOME NEWS FOR HOME PLANNERS



HOFFMAN AIR CONDITIONED VACUUM HEATING SYSTEMS COST NO MORE TO OPERATE THAN ORDINARY ONE-PIPE STEAM!

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CURRENT BOOKS

familiar to wood frame and masonry construction, has given promising results with several of today's prefabrication systems.

An appendix to the study gives comparative costs of inclined and flat roofs. The second half of the book, of great value to architects and designers interested in construction systems, is devoted to a very complete presentation, in drawings and comments, of house prefabrication systems, which were evolved during the years between 1890 and 1936 in the United States and Europe. The suitability of a system may be tested by a questionnaire which sets up the requirements of modern housing. A bibliography of books and magazines on the subject and an alphabetical, chronological and classified index of the prefabrication systems complete the publication.

PERSPECTIVE: A TEXTBOOK AND MANUAL FOR ARTISTS, ARCHITECTS AND STUDENTS.

By Arthur Bridgman Clark, M. Ar. Stanford University Press, Stanford University, Calif. 33 pages, illustrated. Price, \$1.

The exercises on perspective which the author has found to be the most successful over a period of 50 years—which include many years of teaching—are given in this spirally-bound book of data sheets. From simple problems by the plan method, and in the sequence easiest for ready grasp and assimilation, the exercises lead to special problems and the human figure in relation to landscape.

THE 1936 BOOK OF SMALL HOUSES.

By The Editors of *The Architectural Forum*. Simon and Schuster, New York City. 1936. Price, \$1.96.

Over a hundred houses, mostly of moderate size, are illustrated and discussed. The limits of construction cost range from \$1,000 to \$20,000. These houses were selected by an architec-

tural board of *The Forum* which definitely raises the standards above the usual book of houses and their plans. The reader of this book is supplied with a complete outline of construction materials, finishes and equipment. This is a useful guide to a house builder and a study of the outlines can serve in the discovery of trends regarding construction and processes in building.

The book also contains a useful tabular survey giving location of each house, its cubage, its cost, character of heating, wiring, insulation and finish.

YEAR BOOK, NEW YORK SOCIETY OF ARCHITECTS, 1936,

101 Park Avenue, New York City. 332 pages.

The twenty-fifth edition of this Year Book opens with the Code of Professional Practice, followed by a list of names and addresses of practicing architects in New York City, its boroughs, and the other towns in the state of New York. Included in the Year Book and quoted in detail are the Building Zone Resolution Applying to the City of New York, the Multiple Dwelling Law for New Construction and for Alterations, the Building Code of the City of New York.

PLANNING AN ANNUAL NOTE-BOOK.

By "E. & O. E." 1936. *The Architect and Building News, Rolls House, 2 Breems Bldgs., London, E. C. 4.* 304 pages, illustrated.

The contents of this book originally appeared in the form of articles in *The Architect and Building News*. The information presented is considered from the viewpoint of general planning, the particular problems being left to the discretion of the individual designer. Each of the following different building types is given a complete section in which such problems as layout and accommodation, ultimate use and return, occupancy and business are very adequately discussed and illustrated: The House; Planning for the Week-end; Flats; Small Flats; Schools; Planning for Recreation;

Open Air Swimming Baths; Village Halls; Libraries; Hospitals; Hotels; Shops and Stores; Factory Buildings; Planning for the Motor Vehicle; Municipal Buildings.

ARCHITECTURAL DRAWING AND DETAILING.

By J. Ralph Dalzell, B.S., and James McKinney. Published by American Technical Society, Chicago, Ill. 212 pages, illustrated. Price, \$2.

A text and reference book on general practice and technique for the beginner. Includes architectural drawing, architectural detailing, rendering in pen and ink, and landscaping. Presentation follows discussion of each principle, directions for procedure, exercise problems, together with working sketches.

LETTERING: A HANDBOOK OF MODERN ALPHABETS.

By Percy J. Smith. Oxford University Press: London and New York. 100 pages, illustrated. Price, \$3.75.

The author has designed lettering for many important buildings in London and this book is addressed chiefly to students. Thirteen pages of text are devoted to notes on making and using letters. The remainder of the book has numerous illustrations of modern alphabets with suggestions for use and technical notes. Examples by the author and various other designers include freely-painted lettering, poster lettering, penmanship, applied and architectural lettering, initials and decorative lettering, type and related letters. A bibliography of 21 items is given.

A SMALL HOUSE IN THE SUN.

By Samuel Chamberlain. Hastings House, New York City. Price, \$4.

A book of sentimental photographs—some of them lovely—of the traditional architecture of New England. Its main value, as the jacket says, lies in its "ideas for the prospective home builder." This is the first book of photographs by a man best known for his etchings and pencil drawings.

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seepage water



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ONE-FAMILY HOUSE STILL FEATURES RESIDENTIAL FIELD

By L. SETH SCHNITMAN

Chief Statistician, F. W. Dodge Corporation

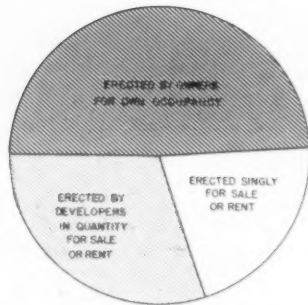


CHART A

The one-family house during first 9 months of 1936. Showing distribution between three major classes of operations on the basis of number of buildings.

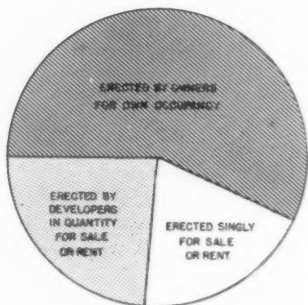


CHART B

The one-family house during first 9 months of 1936. Showing distribution between three major classes of operations on the basis of valuation of buildings.

As the year 1936 draws to a close it becomes apparent that the one-family house still dominates the residential building field. For the initial nine months of the current year some 65,000 new single-family houses were started in the 37 states east of the Rocky Mountains. These had an aggregate construction value in excess of \$400 million and, on a valuation basis, represented virtually 70 per cent of all expenditures in the same area for residential building of all descriptions, both new and alterations.

Dwellings erected by owners for their own occupancy still are the most important class, followed by those erected by development companies for sale or rent. The single-family house, erected singly and principally by mason- or carpenter-builders for sale or rent, is of least numerical importance.

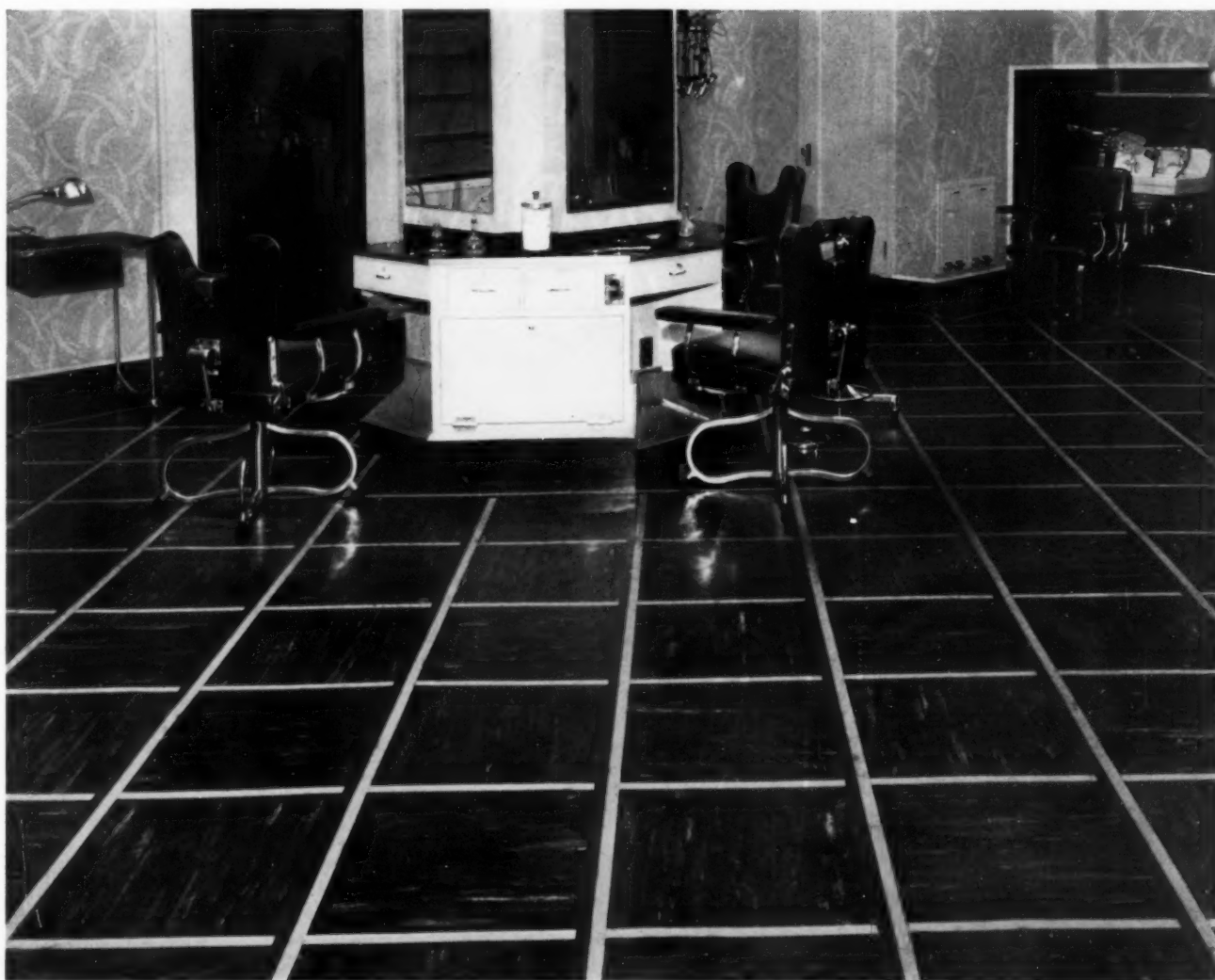
Chart A shows the relative distribution as between these three classes of one-family house operation for the initial nine months of this year based upon numbers of units. Chart B shows the same sort of distribution based upon values.

On the basis of numbers, houses for owner occupancy were slightly less than 50 per cent of the total; housing development types accounted for about 30 per cent, while those dwellings erected singly accounted for only about 21 per cent of the total.

On the basis of valuation, however, the dwellings erected by owners for their own occupancy accounted for about 56 per cent of the total value of all one-family houses; housing developments took an additional 24 per cent, while houses erected singly for sale or rent accounted for the remaining 20 per cent.

From the charts to the side it will be seen that for the first nine months of 1935 about 39,000 single-family

The Architect demanded beauty . . . the owners wanted economy . . . **SEALEX SATISFIED BOTH**



Architect Emil Fels of New York, believing that a Beauty Salon should live up to its name in its interior decoration, designed this attractive floor of specially-cut Sealex Treadlite Tile, for Sibley, Lindsay and Curr, of Rochester.

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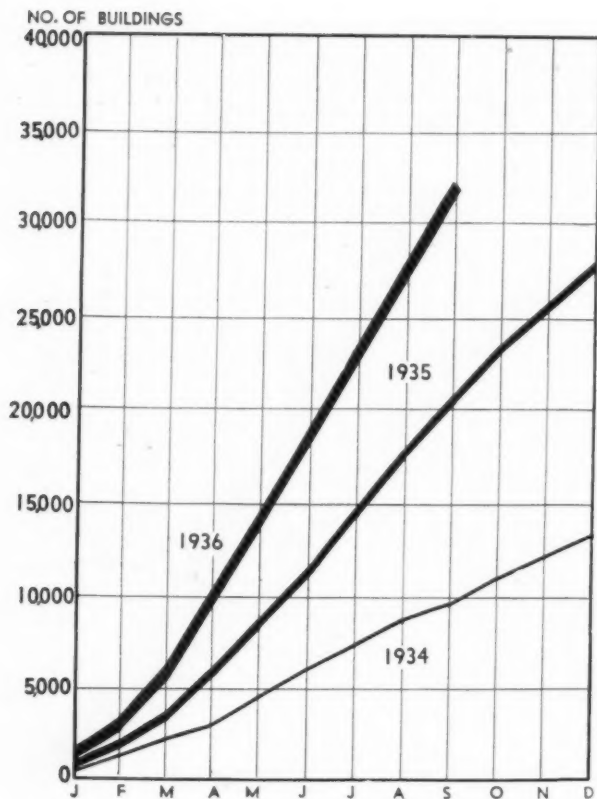


CHART C . . Dwellings erected by individuals for their own occupancy.

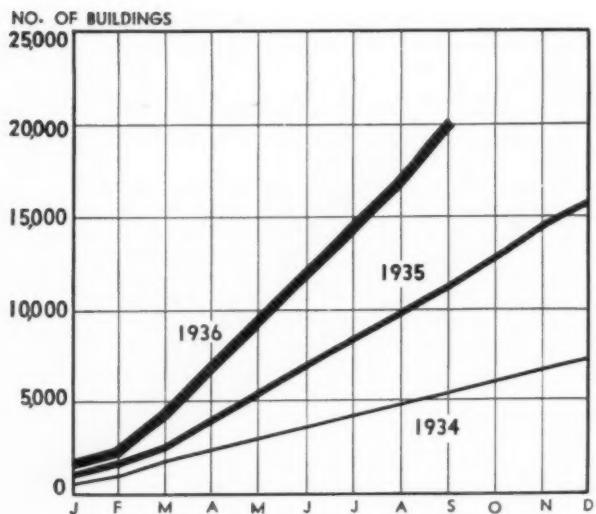


CHART D . . Dwellings erected by development building companies in quantities of two or more, for speculative sale or rent.

houses of all types were started in the 37 eastern states, while in the corresponding period of 1934 only about 20,000 were undertaken. It is thus apparent that the current conditions in this category of home-building are materially better than they were only two years earlier. The three charts on this page indicate the improvement which has occurred in each of the three major classes of building operations in the one-family house field.

Thus far this year about 32,000 houses have been undertaken by owners for their own occupancy in the area east of the Rockies. For the same nine months of this year and in the same area about 20,000 single-family houses were started by housing companies, while an additional number of one-family houses amounting to about 13,000 were undertaken by small mason- or carpenter-builders for sale or rent.

Each of these distinct categories has displayed a continuous healthy improvement over conditions of one and two years ago, as the charts indicate.

On this showing it is still safe to conclude that further gains are likely even though they may not be as spectacular as those which have been widely heralded in some quarters.

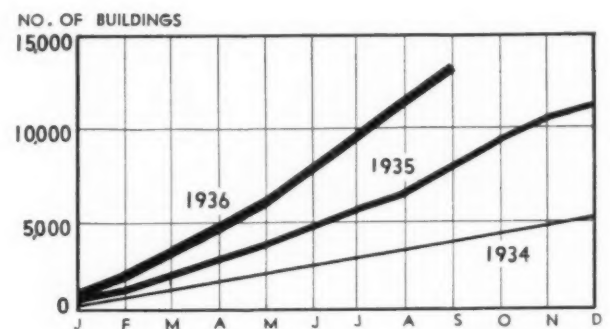


CHART E . . Dwellings erected singly, largely by small mason- or carpenter-builders, for sale or rent.

All charts cover conditions in the 37 eastern states only.



Residence at Syracuse, New York, designed by Dwight James Baum, Architect, Riverdale-on-Hudson, New York City, showing use of Anaconda *Economy* Copper Roofing.

Copper

... combines more advantages than any other roofing material

A PREFERRED roofing material for centuries, sheet copper has now been adapted especially for residential construction. This new product, Anaconda *Economy* Copper Roofing, is lighter in weight (10 ounces per square foot) and is furnished in narrower sheets which provide a space of but 13 $\frac{3}{4}$ inches between standing seams. This reduced width is more in keeping with residential lines, and gives the 10-ounce copper approximately the same rigidity and wind resistance as wider, heavier, more expensive material.

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expense for maintenance, and the following combination of advantages possessed by no other roofing material:

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Protects Insulation—Impervious to moisture, copper preserves the efficiency of under-roof insulating materials of cellular type.



Anaconda Copper

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ARCHITECTS everywhere are enthusiastic about this new colored pencil. It has four unusual advantages.

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MARKETING NEWS



new drafting machines

Features which, according to officials of the Charles Bruning Company, result in a 25% to 40% saving in drafting time are included in the new Bruning drafters. These new models—the Standard drafter, the Civil Engineers' drafter, and the De Luxe Civil Engineers' drafter—are now ready for distribution, after more than a year of testing.

Each of the new machines is equipped with an adjustable brake mechanism to prevent the protractor head from sliding excessively when used on inclined board. Each machine also has adjustable skid buttons for leveling the scales. Pulleys are fully inclosed, and bands may be changed, if necessary, without disassembling the machine. Each machine is equipped with New Departure, precision, fully inclosed ball bearings, lubricated for life. Each machine has an elbow leveling device, another exclusive feature. All parts are of dull-finish aluminum or baked enamel, entirely eliminating reflection.



new bottle top

The new Higgins Drawing Ink bottle stopper has a "new twist." It is really a concave curve to the bottle shoulder that permits the fingertips to hold the bottle while a "twist" removes the stopper. The bottle was designed by Egmont Arens, in collaboration with Tracy Higgins, president of the Chas. M. Higgins & Co., Inc.

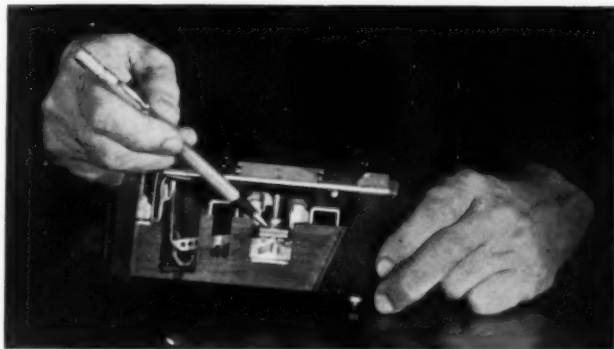
oil paint for calcimine

The Wilbur and Williams Company, 460 Park Square Building, Boston, announces a new oil base paste paint. This paint, called Bondlite, can be applied directly over solid calcimine without any preliminary preparations such as sizing or washing down. One coat will provide complete coverage even when used over rough, porous or water-stained surfaces. In addition to being a sealer over calcimine and a sizer over porous surfaces, the paint provides flat, semi-gloss, or gloss finishes when mixed properly with turpentine, varnish or mineral spirits. It comes in white, buff and ceiling ivory and can be easily tinted.

OF THE BUILDING INDUSTRY

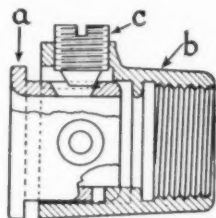
wedgelock electric plug

An electrical plug has been designed with prongs that wedge and lock to the socket. Even if the socket receptacle is worn and loose, the plug will grip, but can be instantly released when desired. The plug has a novel rubber ram that is pushed inward by hand and causes an auxiliary bayonet wedge to slide along each of the two contact prongs into the receiving socket. It is manufactured by Hy-Duty Products Company, 1803 South Hope Street, Los Angeles.



simplified multi-breaker unit

The compact multi-breaker load center recently developed by Square D and Westinghouse engineers (see Technical News and Research, September, page 241) has a simple circuit interrupting mechanism for each of the poles. If necessary, each contact can interrupt 5,000 amperes at 115 volts, 60 cycles, without objectionable noise or flash. The new unit is a low-priced substitute for 115/230 volt AC fuse and switch combinations and conventional individual AC circuit breakers handling branch circuits from 15 to 35 amperes. The number of operating parts has been reduced from 25 per pole in comparable breakers to only 3.



conduit box connector

The National Bondhub is a new type conduit-box connector produced by the National Electric Products Corporation, Pittsburgh. It is a device with which rigid conduit may be connected with a box as firmly and as permanently as if the connection were welded. It consists of three parts: (a) a hub with one end threaded to fit on the conduit, (b) a telescoping flange sleeve and (c) a Wedgscru. The threaded end of the hub is screwed onto the conduit and the sleeve is slipped through the knockout hole of the box into the hub. The Wedgscru is then driven through the hub into a counter sunk hole in the sleeve. The farther the Wedgscru is driven, the tighter the flange draws the hub against the box. Two holes at different places in the sleeve take care of varying box wall thick-

You Attach these New Storm Sash SAFELY from the Inside

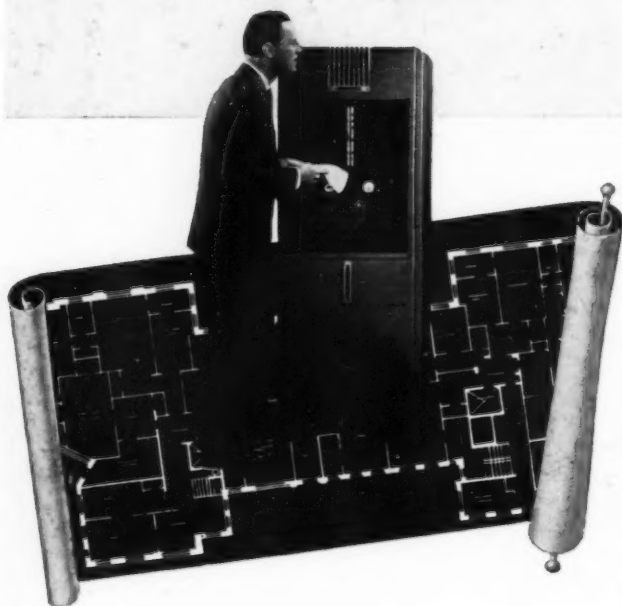


Attaching cumbersome
Outside Storm Sash is
often hazardous.

• Many architects are now specifying the new Fenestra Storm Sash, which attach safely from the inside, replacing the Fenestra Screens in Winter. Especially designed to meet the needs of air conditioned houses, the combination of Fenestra Casement and Inside Storm Sash seals the window opening tight. The dead-air space between windows provides effective insulation, and stops condensation and frost — insures clear glass. For complete details, address DETROIT STEEL PRODUCTS CO., 2257 East Grand Boulevard, Detroit, Michigan.

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NEWS of the BUILDING INDUSTRY

nesses. A key in the hub and two slots in the sleeve bring these holes directly under the Wedgscru. Tightening the Wedgscru with a screw driver is the only operation necessary to assure a permanent, tight connection. This eliminates the necessity of making unions in the conduit for box connections and also eliminates the possibility of a loose connection at the box due to difficult installation conditions as well as running threads.



combination mercury-incandescent lighting units

The Benjamin Electric Mfg. Co., Des Plaines, Ill., announces a new fixture which combines the light from a 250-watt mercury lamp and one 300-watt or two 150-watt incandescent lamps. The mixing of the yellow-green light rays of the mercury lamp and the predominantly red rays of the incandescent lamp provides a light which is psychologically cool and which simulates daylight.

The General Electric Vapor Lamp Company, Hoboken, N. J., likewise announces a new combination unit. The mercury vapor light source is a straight 33" Cooper-Hewitt tube, 1" in diameter, mounted horizontally beneath a new designed reflector of Alzac aluminum. The incandescent light sources are four 150-watt Mazda lamps, located diagonally in a horizontal plane above the mercury tube. A feature of the new lamp from the sight-saving standpoint is its large light-source area and low intrinsic brightness. Due to the use of the long Cooper-Hewitt tube and well-spaced incandescent lamps, a total output of 11,200 lumens is evenly distributed through the 650 square inches of diffusing glass which forms an angular channel beneath the lamps. Even when the light source is directly within the line of vision, there is no glaring or blinding effect.

A correctly spaced room layout of these lamps is said to provide practically shadowless lighting, maintaining the desired illumination level uniformly throughout the working area without excessive illumination at any point, the over-all effect, in both distribution and color characteristics, being that of an "artificial skylight."

Operating efficiency has also been improved. The mercury vapor tube in the new lamp supplies as much light at 275 watts as former tubes requiring 350 watts. The lamp is furnished for operation on 110-volt or 220-volt AC systems, with a high over-all power factor. Externally the lamp has been completely redesigned to improve its appearance for drafting room and office use as well as in industrial applications. It has a smooth aluminum finish which simplifies cleaning and maintenance. The unit weighs 67 lb. complete with tube and lamps and is completely self-contained.

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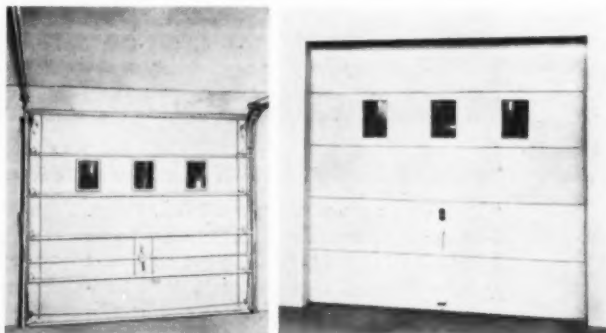
NEWS of the BUILDING INDUSTRY



steel sash glazed with rubber putty

One of the construction features of the new automobile assembly plant being erected in the Federal District by General Motors of Mexico is the use of rubber putty for glazing the steel sash. All of the steel sash used in the saw-tooth roof and sidewalls is glazed with Plastikon putty, a product of The B. F. Goodrich Company, Akron, Ohio. This rubber base putty adheres to steel, wood or glass and, due to its low oil content, requires no mixing prior to application.

A rubber type putty was selected for this service because although solidifying and shrinking slightly it does not crack in shrinking nor does it become brittle—two features desirable because of the extreme heat and dryness encountered in this territory. Even after applying, the rubber putty retains a certain degree of elasticity.

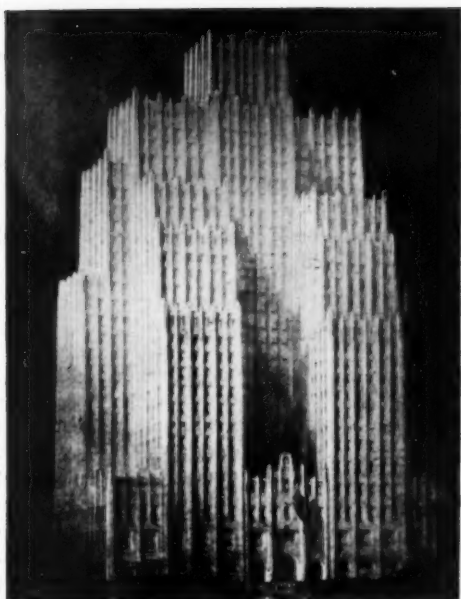


all-metal door

"All-Steel RoL-TOP"—the new sectional steel door developed by Kinnear Mfg. Co., Columbus, Ohio—raises easily up, over and back, by means of two matched tension springs lying parallel to the horizontal tracks.

laminex streamliner door

A new door for interior use—the Laminex Streamliner—has been developed by Wheeler Osgood Sales Corporation, Chicago. (Sweet's Catalog File 10/36.) It is manufactured with plain panel surfaces of 3-ply Douglas fir, or Philippine mahogany. The rigidly braced hollow core provides strength with light weight, and has a series of chan-



**Southwestern Telephone Co.
building
St. Louis, Mo.**

Architects: Mauran, Russell & Crowell in collaboration with architects of Southwestern Telephone Co. Roofing Contractors: St. Louis Slate & Tile Roofing Co. and the Insulating Materials Co., St. Louis.
Genasco Standard Trinidad Built-up Roof applied in 1926.

**Scottish Rite Cathedral
St. Louis, Mo.**

Architect: William B. Ittner, St. Louis. Roofing Contractors: Insulating & Materials Co., St. Louis.
Genasco Standard Trinidad Built-up Roof applied March, 1923. Still in excellent condition.



**Federal Reserve Bank
St. Louis, Mo.**

Architects: Mauran, Russell & Crowell. Roofing Contractors: Insulating & Materials Co., St. Louis.
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Three great structures in one city that are outstanding. The Southwestern Telephone Company's home . . . center of a great communications system. The Scottish Rite Cathedral . . . one of the most beautiful fraternal buildings in the entire country. The Federal Reserve Bank . . . that houses considerable of the nation's currency.

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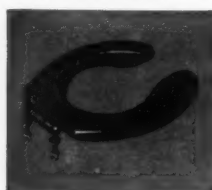
A thick sheathing veneered onto hardwood gives Church *sheet covered* Seats their glistening, ever-clean appearance. They are not varnished or painted. The wide choice of colors, in plain and pearl, places no limitation on your color scheme. Harmonize them effectively with other decorations. Soap and water keep them clean and lustrous.

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NEWS of the BUILDING INDUSTRY

nels, screened at exterior openings, allowing thorough circulation of air for resistance to warping effects of moisture and temperature changes. Laminex cement is used in the door to provide a permanent, moisture-resistant bond. The surface can be painted or stained. Virtually any arrangement of panel effects can be obtained, or routed and inlaid designs are easily provided.

continuous dual arc control welder

A new line of single operator arc welders is announced by The Lincoln Electric Company, Cleveland. These new welders will be known as the "Shield Arc SAE" and will supersede the present type of "Shield Arc" which has been on the market for the last six years. A new method of arc control makes possible the adjustment of both arc heat and arc penetration in a continuous sequence of fine increments. It is claimed this continuous dual control assures absolute uniformity of performance at every control setting.

one-pipe steam heating

Anderson Products, Cambridge, Mass., has introduced a Vent-Rite balancer which, when used with the Vent-Rite No. 2 vacuum valves, creates a new system—the Vent-Vac system. Installed on automatically fired one-pipe steam jobs, it operates as an open atmospheric and vacuum system combined, retaining only the desirable, practical features of both systems. The balancer is a solenoid operated valve, which automatically returns a system under vacuum to atmospheric pressure at the start of every firing cycle.

all-copper hot water supply


With the development of Arcoloy, a new patented metal used for the manufacture of range boilers and storage tanks, American Radiator Company announces the completion of the all-copper domestic hot water supply system. This development follows the introduction by this company within the past two years of a complete line of copper fittings for the complete copper-in-heating installation and it makes possible the use of a copper storage tank in radiator conditioning installations that include a domestic hot water supply.

research in air conditioning

The American Society of Heating and Ventilating Engineers, according to an announcement by Prof. G. L. Larson, Madison, Wis., president, is enlarging its program of research. The Society is the only professional engineering organization which maintains and operates its own research laboratory. The sole object of this work for nearly 20 years has been to develop data for the scientific and practical advancement of the art of heating, ventilation and air conditioning.


Since 1919 when the A. S. H. V. E. Research Laboratory was established in the U. S. Bureau of Mines at Pittsburgh, the Committee on Research has selected problems to be studied at the laboratory or in cooperative institutions where the details are worked out by a Technical Advisory Committee of experienced engineers in the field who serve without remuneration.

Among the problems now under investigation are the following: (1) a study of comfort requirements for sum-



**MR. WARREN
HAS BOUGHT
THIS HOUSE**

**PROBLEM
No. 3**



**HE WANTS YOU
TO REMODEL IT
LIKE THIS**

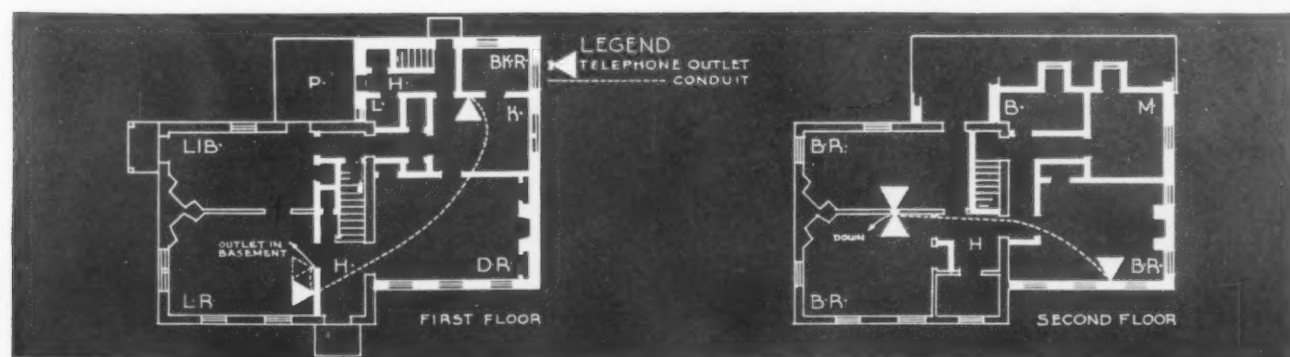
**HOW WOULD YOU PLAN THE
TELEPHONE ARRANGEMENTS?**

THE WARRENS have found *the* house. Not too far from the city. Splendid view. Plenty of space for Harry, 16, and Tommy, Jr., 18. A big guest-room for week-ends. *What telephone arrangements would you recommend?*

First of all, conduit or pipe from cellar to telephone outlets, to avoid exposed wiring and provide protection against certain types of service interruption. Once it's installed in the walls, leading to the right number of outlets, in the right places, the Warrens won't worry about telephone convenience for many years to come.

Now, for outlets. One in the master bedroom, certainly. One in the boys' room, probably, for a portable telephone. Another for a portable telephone in the guest-room—a gracious touch typical of the Warrens. Outlets, of course, in the living-room and kitchen. And, an outlet for a portable telephone in the basement game-room to save steps when this active family is entertaining.

This is a suggested approach to a typical problem. Our engineers will help you develop efficient, economical conduit layouts at any time. No charge. Call your local telephone office and ask for "Architects' and Builders' Service."





A NEW DAY DAWNS IN DRAFTING

FOR SEVEN YEARS, Bruning Drafting Machines have lifted a huge burden of time-wasting drudgery from draftsmen's shoulders. For seven years, they have proved that they save from 25% to 40% of drafting time. It is a simple fact that no other machines of their kind have approached them in efficiency and ease of use.

And now, again, Bruning heralds a new day in drafting with new models of its Standard and Civil Engineers' Drafting Machines.

These new Bruning Drafters are the finest, most perfected tools ever offered to draftsmen. They embody the widest range of exclusive advantages to be found in any drafting machines on the market. Yet they are simple in construction, and have the fewest working parts of any full-sized machine.

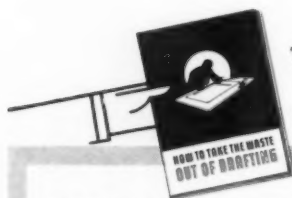
It is to your interest to know about the great forward stride that has been taken in drafting machines. So that you may have complete information, we have prepared an illustrated booklet describing the new Bruning Drafters. You are under no obligation in mailing the coupon for a copy.

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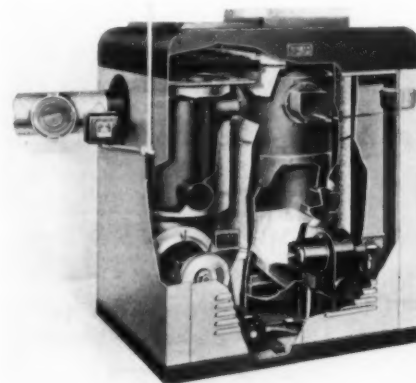
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NEWS of the BUILDING INDUSTRY

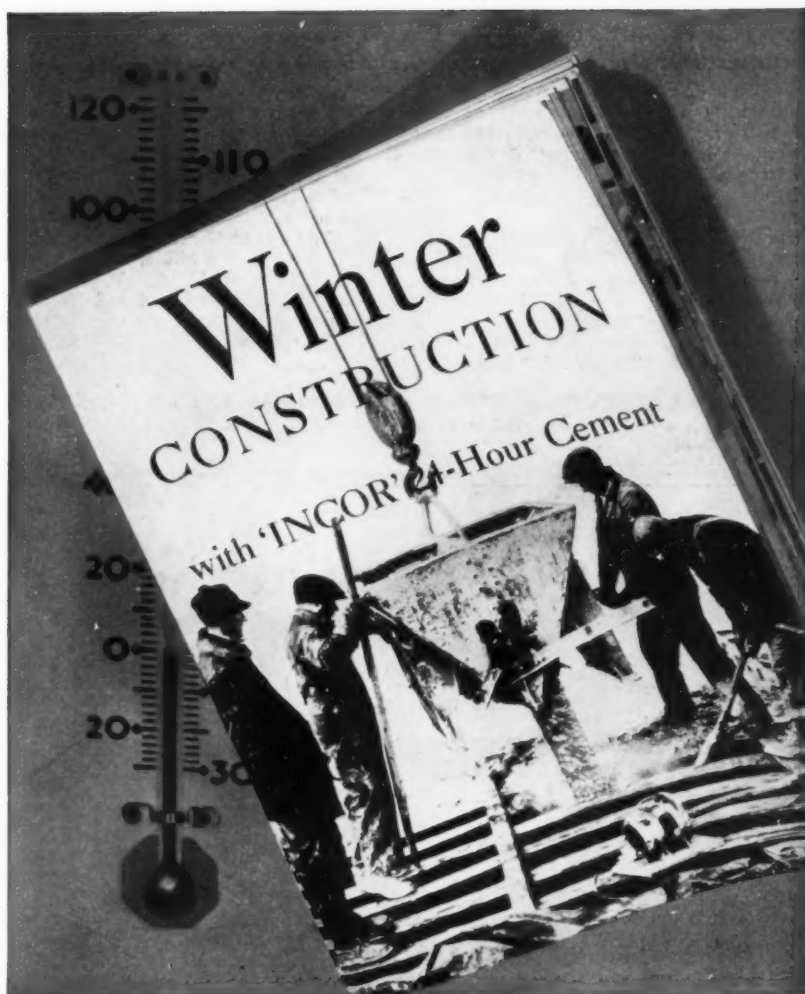
mer cooling to check the extent to which varying climatic conditions in several geographical locations affect the desirable indoor temperature; (2) a determination of the frictional resistance to the flow of air through round ducts and fittings to be followed by a comprehensive study of rectangular ducts and fittings; (3) an investigation of the time and rapidity of change from the summer to the winter comfort zone; (4) a study of air movement as related to various temperature and humidity conditions to determine what constitutes a draft; (5) a study of the relative conductivity of concrete mixtures containing various special light aggregates; (6) atmospheric duct and air cleaning devices; (7) relation between temperature velocity, direction and location of entering air stream on ventilation conditions within occupied spaces; (8) the use of refrigeration in the treatment of air; (9) air cleaning and its effect on health in the treatment of diseases; (10) heat transfer between air and fin tubing; (11) odors as a limiting factor in volume of air recirculated in occupied spaces; (12) corrosion in steam heating systems.

Many more problems need to be investigated to develop fundamental data for use in the heating, ventilating and air conditioning fields. This program is fully supported by every member of the American Society of Heating and Ventilating Engineers, as they contribute 40% of their annual dues directly to the Research Fund. The Research Finance Committee through George Kingsland, chairman, Minneapolis, has just announced that its objective is to raise a fund of \$100,000 for 1936-37 in order to meet the growing needs of engineers who need fundamental data on heating, ventilating and air conditioning.



Timken winter air conditioner

A new type of winter air conditioning oil furnace has been announced by the Timken Silent Automatic Division of The Timken-Detroit Axle Company, Detroit. An outstanding feature is a chromium steel fire-box used in connection with the Timken Model GC pressure oil burner. This metal fire-box replaces the usual brick or cast refractory; it permits bottom and all of the sides of the combustion drum to be used as effective heating surface. The air passes over increasingly hotter surfaces so that the hottest air contacts the hottest part of the furnace just before leaving the unit. Controlled moisture supply is made possible through the use of a humidifier equipped with an automatic water supply mechanism. The unit has a capacity of 80,000 B.t.u.'s at the registers and can deliver from 800 to 1,200 cubic feet of air per minute. Over-all measurements are 41 5/8" wide, 50 3/16" long and 59" high.



DOLLARS-AND-CENTS OF COLD-WEATHER CONCRETING

Concrete hardens through a chemical re-action between Portland cement and water. As concrete temperatures fall, this re-action is retarded; at or about freezing, it practically stops. To overcome the effect of low air temperatures, it is necessary to heat concrete materials and retain that heat until the concrete has hardened sufficiently to go it alone. It follows that the quicker concrete hardens, the less time and expense are required to maintain heat artificially.

Through a basic improvement in the process of making Portland cement, 'Incor' cures or hardens thoroughly in one-fifth the usual time. Thus, in erecting a concrete building, for example, 'Incor'* saves from two to five days' heating expense per floor. On a 6-story concrete frame, 100' x 100', coke and fire-tending labor average about \$60 a day; so two days saved per floor means at least \$120, or a total of \$840 saved for six stories and roof. These savings in fuel and labor are usually accompanied by substantial form economies and by a reduction in erection time, which means reduced overhead costs as well. For details about cold-weather concreting advantages and simple precautions needed in cool, cold and sub-freezing weather, write for free copy of "Winter Construction"—address Lone Star Cement Corporation (subsidiary of International Cement Corporation), Room 2210, 342 Madison Ave., New York.

*Reg. U. S. Pat. Off.

'INCOR' 24-HOUR CEMENT

NEW BOOKLETS AND BULLETINS

In writing to manufacturers for any of the new catalogs or booklets listed in this column, mention of **The Architectural Record** will be greatly appreciated.

DESIGN AND CONSTRUCTION

Designs of Medium-Priced Homes Prepared by Ten National Home and Women's Magazines, NAH-112. General Electric Co., Schenectady, N. Y.*

Designed for Concrete. Portland Cement Association, 33 West Grand Avenue, Chicago, Ill.

Booklets on Ponderosa Pine and Idaho White Pine. Western Pine Association, Yeon Bldg., Portland, Oregon.*

Specification for The Design, Fabrication and Erection of Structural Steel for Buildings. American Institute of Steel Construction, 200 Madison Avenue, New York.

The Building of Boulder Dam. The Barrett Company, 40 Rector Street, New York.*

Concrete Joist Construction. Concrete Reinforcing Steel Institute, 201 North Wells Street, Chicago, Ill.

Technical Bulletins No. 4 and No. 5. Brick Manufacturers Association of New York, Inc., 1716 Grand Central Terminal, New York.

MATERIALS AND APPLIANCES

Industrial Products. Johns-Manville Corporation, 22 East 40th Street, New York.*

Oak. Southern Hardwood Producers, Inc., 600 Maritime Bldg., New Orleans, La.

Plywood. United States Plywood Company, Inc., 603 West 36th Street, New York.*

Permatol Preservative, Technical Bulletin No. 6. Western Pine Association, Yeon Bldg., Portland, Oregon.*

Invisible Glass, Catalog No. 16. Invisible Glass Company of America, Inc., 250 Park Avenue, New York.

Weatherwood: Insulation. United States Gypsum Company, 300 West Adams Street, Chicago, Ill.*

Guaranteed Insulation. The Celotex Corporation, 919 North Michigan Avenue, Chicago, Ill.*

Waterproofed Concrete. Medusa Portland Cement Company, 1000 Midland Bldg., Cleveland, Ohio.*

How to Paint Concrete, Stucco, Masonry and Other Surfaces. Medusa Products Company, Div. of Medusa Portland Cement Co., 1000 Midland Bldg., Cleveland, Ohio.*

Paint for Metal. Koppers Products Company, Koppers Building, Pittsburgh, Pa.*

Suntile. The Cambridge-Wheatley Co., Cincinnati, Ohio.

The Lavashower. Lavashower Corporation, 112 South 16 Street, Philadelphia, Pa.

All Electric Kitchen. Westinghouse Electric & Manufacturing Co., Mansfield, Ohio.*

Metal Tape for Venetian Blinds. Cameron Metal Tape Company, Inc., Broad Street and Allegheny Avenue, Philadelphia, Pa.

Motors of New Design. General Electric Co., Schenectady, N. Y.*

Water Pipe Sizes, by Walter S. Timmis. Bridgeport Brass Company, Bridgeport, Conn.*

LIGHTING, WIRING

Illumination Handbook, Price 10c. Westinghouse Lamp Company, Commercial Engineering Department, Bloomfield, N. J.

Wired Help. Westinghouse Electric & Manufacturing Co., Rural Electrification Department, Mansfield, Ohio.*

The Farm Wiring Problem, by H. G. Knoderer, Commercial Engineer. General Electric Company, Bridgeport, Conn.*

CONTROLS

Lokator Systems, Bulletin No. 440. Edwards and Company, Inc., 140th and Exterior Streets, New York.*

Standard Instruments. Julien P. Friez & Sons, Inc., Baltimore Street and Central Avenue, Baltimore, Md.

Air Operated Controllers, Catalog No. 8901. The Brown Instrument Company, Div. of Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.*

Oil Burner Controls, Bulletin No. 66F. The Merco Corporation, 4203 Belmont Avenue, Chicago, Ill.*

The Newest Development in Fighting Fires. Pyrene Manufacturing Company, 560 Belmont Avenue, Newark, N. J.

AIR CONDITIONING, HEATING, VENTILATING

Temperature Control is Health Insurance, by Shirley W. Wynne, M.D. The Temperature Research Foundation of Kelvinator Corporation, 420 Lexington Avenue, New York.*

Air Conditioning. (Limited in Distribution.) York Ice Machinery Corporation, York, Pa.*

Home Air Conditioners. Carrier Corporation, 850 Frelinghuysen Avenue, Newark, N. J.*

"Heat-An-Aire" Conditioner. May Oil Burner Corp., Baltimore, Md.*

* See other information in Sweet's Catalog File.

Winter Ahead — Cut Down on Heat Loss with REVOLVING DOORS by GENERAL BRONZE

Heat loss means money lost and revolving doors will save more than their cost in winter fuel bills.

Revolving doors insure the smooth flow of traffic and at the same time stop drafts; reducing layoffs on account of sickness. In a high wind a revolving door is easy to operate—dust and dirt are eliminated—no spoiled merchandise—no cleaning bills. So include General Bronze Revolving Doors in your next job—owners will profit.



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THE FIREPROOF LATH

offers increased fire resistance at low cost



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Perforated Rocklath is made of gypsum. It is fireproof as gypsum is fireproof. It will neither burn nor support combustion. It is easily applied, the large units go on rapidly. It can be scored and broken as needed to fit standard stud or joist spacing.

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this unique lath. The plaster keys through the perforations — takes hold in a new way as he runs the trowel over it.

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Perforated Rocklath is not an experiment. It has proved itself in every way — in laboratories, in the field. Millions of feet of Perforated Rocklath are now in use — and thousands of homes are safer to live in because of it.

Perforated Rocklath is patented and manufactured exclusively by the United States Gypsum Company. Mail coupon for free large sample of Perforated Rocklath.

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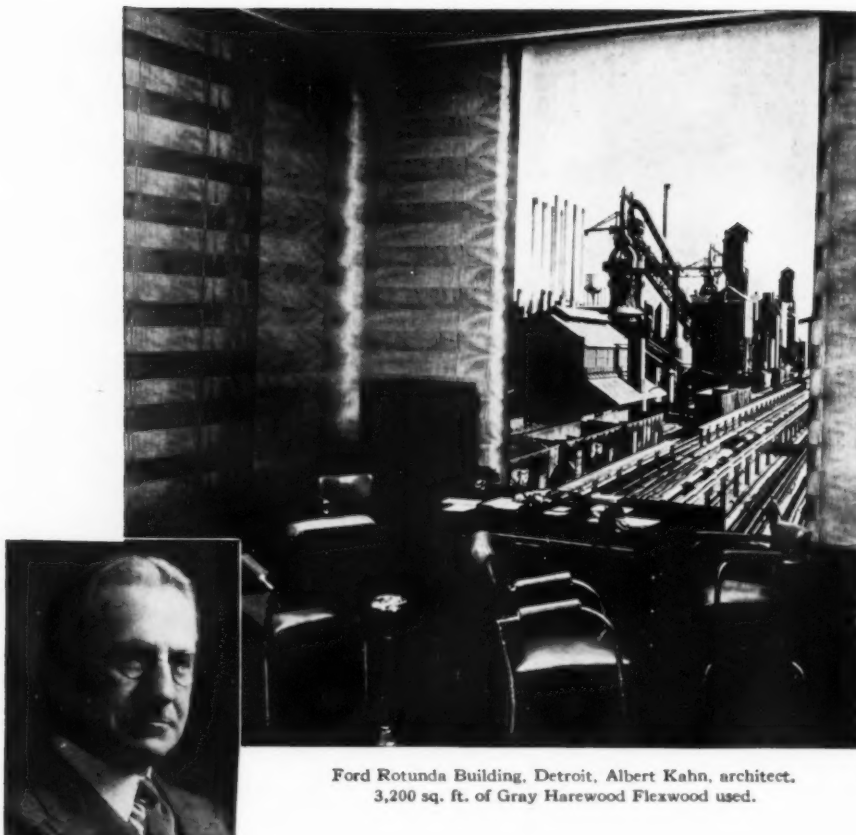
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Ford Rotunda Building, Detroit, Albert Kahn, architect.
3,200 sq. ft. of Gray Harewood Flexwood used.

"Wood in No Other Form Approaches Flexwood in Cost, Ease and Speed of Application"

Albert Kahn, internationally known architect of Detroit, has a reputation for giving dollar-minded automobile manufacturers the most for their architectural dollar.

His modern and efficient manufacturing plants, office and public buildings have made him pre-eminent. It was logical that Mr. Kahn should choose Flexwood for an important phase of the decoration of the Ford Rotunda Building. From the wide selection of fitches of rare woods available, he selected Gray Harewood. Mr. Kahn says:

"Flexwood was specified because as a decorative medium, it made possible modern wall treatment in genuine wood at minimum cost. Exotic Gray Harewood was chosen because it harmonizes with the black pilasters and photo-murals. Wood in no other form could have accomplished the desired treatment better than Flexwood."

Flexwood is genuine wood veneer mounted on cloth. Flexwood, because it is wood, takes any wood finish. Please write for complete data on this modern way of wood panelling.

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NEW BOOKLETS (cont.)

Mobilaire Unit. Westinghouse Electric & Manufacturing Company, Mansfield, Ohio.*

New Equipment. Gar Wood Industries, Inc., 7924 Riopelle Street, Detroit, Mich.

Steam Heating. Anderson Products, Inc., Cambridge, Mass.

New Models. Anchor Stove and Range Co., Inc., New Albany, Ind.

Range Boilers. Whitehead Metal Products Co. of New York, Inc., 304 Hudson Street, New York.

Arco Accessories. American Radiator Company, Div. of American Radiator and Standard Sanitary Corporation, 40 West 40th Street, New York.

Common Sense Ventilation for Industrial and Commercial Buildings, Bulletin V-100-B. The Swartwout Company, 18511 Euclid Avenue, Cleveland, Ohio.*

NEW ADDRESSES

Good and Wagner, architects, announce the removal of their offices to 641 First Central Tower, Akron, Ohio.

Morris I. Tepman and Maurice Mantel, store planners and industrial designers, are located at 2860 Hudson Boulevard, Jersey City, N. J.

6451 South Main Street, Houston, Texas, is the new address of Campbell and Keller, architects.

Adolph Witschard has opened an office for the practice of architecture at 188-20 Central Avenue, St. Albans, Long Island, N. Y.

The opening of an office at 1551 Franklin Avenue, Mineola, Long Island, N. Y., is announced by Joseph Watterson, architect.

Announcement is made by the United States Gypsum Company of the creation of a specialized Department of Architectural and Engineering Service under the direction of E. B. Johnson.

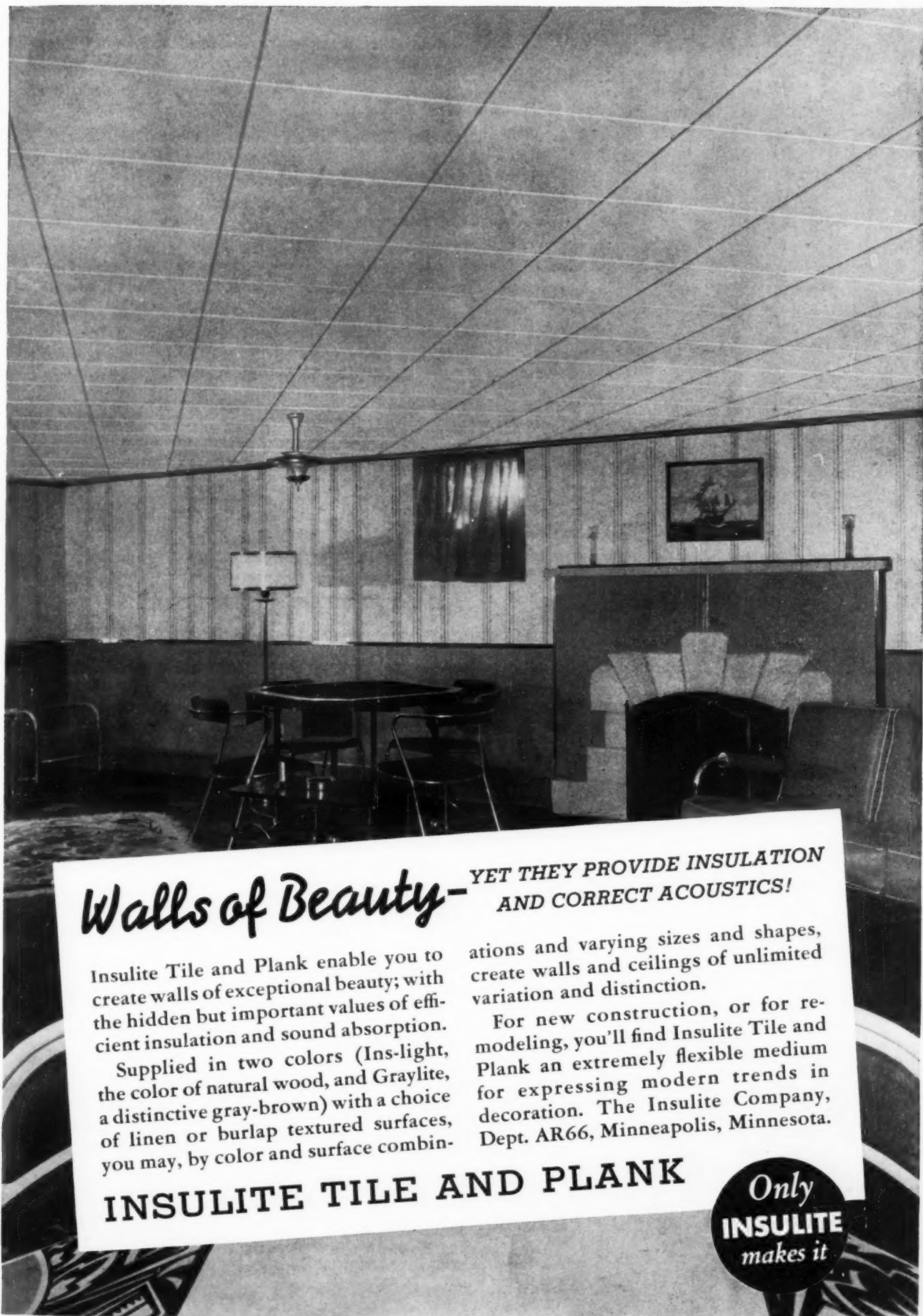
All-Steel-Equip Company, Inc., of Aurora, Illinois, announce the opening of a new office at 401 North Broad Street, Philadelphia.

CORRECTION NOTICES

On page 144 of the August 1936 issue of *The Architectural Record*, John Porter Clark was termed "architect." This is an error since he is not registered in the State of California.

The Lincoln Theatre Building, on pages 101-104 of the August 1936 issue, should have been credited to Robert E. Collins, architect, and not Herbert E. Collins.

The door knob illustrated in the lower left hand corner of page 399 of our May 1936 issue was incorrectly credited to Gustav Jensen. This knob was designed by Walter S. Vaughn of Ostrander & Eshleman, Inc., New York City.



Walls of Beauty- **YET THEY PROVIDE INSULATION AND CORRECT ACOUSTICS!**

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For new construction, or for remodeling, you'll find Insulite Tile and Plank an extremely flexible medium for expressing modern trends in decoration. The Insulite Company, Dept. AR66, Minneapolis, Minnesota.

INSULITE TILE AND PLANK

*Only
INSULITE
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REVIEWS OF CURRENT BOOKS

ALBERTO SARTORIS, GLI ELEMENTI DELL'ARCHITETTURA FUNZIONALE, *Second Revised Edition, 687 Reproductions. Milano: Ulrico Hoepli.*

Alberto Sartoris is not only an architect of talent and an author of merit, he is above all a man of firm conviction. The architectural idea taking life in space, this sense of intellectual order which we attribute to the new architecture, stimulates him. Therefore to give a "panoramic view" of the construction activities of about thirty countries is for him more than a mere duty, it is an act of devotion.

Sartoris, like most of the young architects, has allied himself closely with the new plastic arts derived from impressionism. Consequently he is familiar with the development of this sensibility which is characteristic of our period, as exemplified in the various creations of contemporary painters and sculptors. This new machine tradition, manifesting itself more and more in our everyday life, finds a definite form in the works of art, thanks to the artists who are in tune with their time. The coming of the machine and the integration of the tool in our life created entirely new sources of art as an expression of a new consciousness and of a content that has become legitimately human. Now this sensibility which contrasts definitely with the past is brilliantly illustrated in this book. The choice of the plates is that of a discriminating collector, and it is a remarkable achievement of patience to assemble documentary data from such distant points—from the Argentine to Finland, from Los Angeles to Zagreb. But we should not be surprised to find a striking similarity between the creations of the new architecture and the other plastic arts. A work of Le Corbusier (page 164) will certainly recall a picture of Amedee Ozenfant; Rietveld (page 396) has many things in common with Piet Mondrian and the neoplastic movement.

There has been much discussion about the term "functional architecture" as opposed to a free spiritual creation. For those who can read the Italian text of this book, especially the chapters "The Formula of Functionalism" and "Mediums and Materials of

the New Architecture," there will remain no doubt as to the high intellectual quality of this architectural movement. Functional architecture! Yes, very human functions as the man's right to be free to feel, to enthuse, to make full use of his spiritual faculties, to give free way to the aspiration of his heart. Would this be sufficient guaranty for a genuine culture? We have always thought that under the term of functional architecture are known all those creations which have evolved beyond academic barbarism. (How deceiving is the fact that the Humanities have always had a nefarious influence upon the plastic arts, demonstrating the very absence of all culture!)

Since the first edition of this book, about three years ago, an imposing number of projects, then examples of paper architecture, are now presented in reality. We see that the construction activity of today is determined by a minority of "aesthetes" of yesterday who made no pretensions to do otherwise than to think, to feel, to breathe the atmosphere of their time and to work out solutions of contemporary problems. It is unexpected indeed to find in the pages of this book so vast a quantity of posthumous works. Sant Elia, Theo Van Doesburg, Adolf Loos, Karl Moser, Brinkman are no longer with us.

Sartoris has made an attempt at an epic and at the same time a comprehensive survey of the most worthy specimens of the new architecture. In his effort to remain, above all, orthodox, he has excluded the works of important pioneers. It is regrettable that Berlage, Behrens, Van der Velde, Perret do not figure in this book. Frank Lloyd Wright is the single exception.

Perhaps we should say a word on the omissions of obvious technicalities which so often appear in architectural books to impress the layman. Nevertheless we believe that this book is primarily addressed to architects rather than to the general public; for those at least who are not seeking novelties, nor the superficialities of certain forms, but who can be moved by the sincere

(Turn to page 22 adv.)



BEAUTIFUL AND DISTINCTIVE — And That's Not All!



Bruce Finished Blocks are widely used in commercial areas and in colleges, schools, clubs, etc.

There are many beautiful floorings available today—many that are unusual and distinctive. But beauty and distinctiveness are only two of several important qualities which the ideal flooring must possess.

DURABILITY (How will the floor look 5, 10 or 25 years from now?) **SIMPLE MAINTENANCE** (Can it be kept at its original beauty by simple methods?) **EASE OF INSTALLATION** (Can it be laid over any type of sub-floor or old floor without costly preparatory work?) These are considerations which an architect can fully appreciate, but which the owner may overlook in selecting a flooring that will give lasting satisfaction.

The Bruce Finished Block Floor is beautiful and distinctive—and that's not all! It has the well-known durability of hardwood . . . can be maintained simply, and completely refinished whenever necessary . . . is easy to install by nailing or in mastic.

Furthermore, each Bruce Finished Block is completely finished at the Bruce Plants—even to waxing and polishing. Thus a perfect finish is assured and the floor is ready to use the minute the last Block is in place. More than 20,000,000 feet of Bruce Blocks are now in use in structures of all types.

Illustrated literature and A.I.A. File may be obtained by writing E. L. Bruce Co., Memphis, Tenn.—"World's Largest Maker of Hardwood Floorings"



Bruce Finished Block HARDWOOD FLOORING

REVIEWS OF CURRENT BOOKS

Continued from page 20 adv.

attempt of various creators in different countries and by mediums which differ more or less in each region: a wooden dwelling in Sweden, a glass house in Paris, a reinforced concrete building in London. Among the technical literature, or apparently technical, which has been all the rage the past few years, the Elements of Functional Architecture have the advantage of offering us a more esoteric significance of this movement about which there has been so much debate. Technic varies from one day to another—it is conditioned by the climate and the economic system of each country. Only the human side, can we say, remains unchangeable.

Stamo Papadaki

MODERN FURNISHING AND DECORATION.

By Derek Patmore. New and Revised Edition. The Studio Publications, London. 1936. \$4.50.

Mr. Derek Patmore is an interior decorator and critic. The selected illustrations suggest that the author is partial to decoration rather than to an interior result that follows rational planning. In the text he records "a growing popular desire for decorative detail."

New tendencies perceived on the horizon, since the first edition was printed in 1934, include:

"A definite return to the use of color as opposed to the all-white and monotone color scheme.

"Square-shaped furniture is no longer quite so popular.

"Textures are becoming more elaborate, and fabrics—whilst many of them still rely on their interesting weave and texture for their effect—are returning more and more to colored decorative patterns."

The interior decorator will find interest in the excellently printed plates, many of them in color.

THE LESSON OF JAPANESE ARCHITECTURE.

By Jiro Harada. Edited by C. G. Holme. The Studio Ltd., London. 1936. \$10.

The idea underlying contemporary architecture and interior design—the light, space and convenience, the reliance upon strength of form and beauty of materials for a design result—has for centuries been an essential part of the slowly developing

Japanese tradition. Japan is the fortunate possessor of an architectural tradition which, securely founded, has not lost its validity with the passage of years. The tradition is today being translated into new and modern forms for Japanese life. The principles are equally applicable to this country.

THE CHARM OF THE TIMBER HOUSE.

With an introduction by S. P. B. Mais. Ivor Nicholson & Watson, Ltd., London. 1936. \$1.

This brochure illustrates recent use of lumber as a building material in England and America. There are examples also of 17th, 18th and 19th century timber-built houses selected to show how this material has been used to solve architectural problems on both large and small scales.

VENTILATION MANUAL FOR SHEET METAL CONTRACTORS.

By Paul R. Jordan. A treatise on the type of ventilation which sheet metal contractors are called upon to plan and install. Edwin A. Scott, Publishers, New York. 1936. \$3.

The book deals with what might be termed ductless ventilation, the class of work in which propeller fans or roof ventilators are used, with but little or no duct work. It is not intended for the engineer or designer of central systems employing extensive duct work.

COPPER DATA; *Brasses and Other Copper - Zinc Alloys, I; Bearing Bronzes; Copper - Steels to Resist Corrosion; Brass and Other Copper Alloy Wire and Wire Products; Copper Alloy Extruded and Drawn Sections; Sheet Copper-Work for Building; The Use of Copper for Domestic Water Services; Copper for Architecture in Sweden and Denmark.*

The above listings comprise a series of books about copper and brasses prepared for architects and engineers. These books are published by the Copper Development Association, Thames House, Millbank, London, S.W.1, from whom further information may be obtained. The Association is a noncommercial organization representing the British copper industry as a whole.

OUTSTANDING PERFORMANCE

*for removing
seepage water*

*for modernizing
hot water heating systems*

**PENBERTHY AUTOMATIC
CELLAR DRAINER**
(Water or Steam operated)
Made in 6 sizes



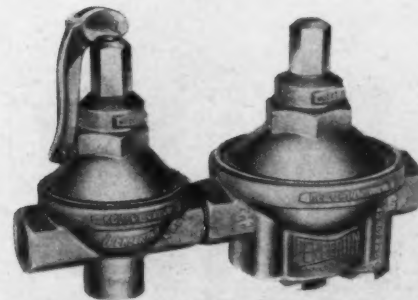
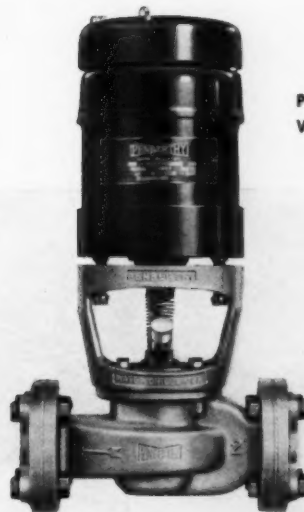
**PENBERTHY AUTOMATIC
ELECTRIC SUMP PUMP**
Made in 6 sizes



Advanced and rugged design, copper and bronze construction throughout, and careful workmanship are responsible for the demonstrated superiority of these Penberthy pumps wherever seepage water accumulates. Leading jobbers stock Penberthy products.



**PENBERTHY
WATER CIRCULATOR**
Made in 3 sizes



PENBERTHY PRESSURE & RELIEF CONTROL
Made in 2 Models

Relief valves and pressure reducing valves are other items in the line of Penberthy Hot Water Heating Specialties. All are constructed of high grade steam bronze; design and workmanship are also of exceptional quality. Your jobber will gladly give you complete information and supply your needs.

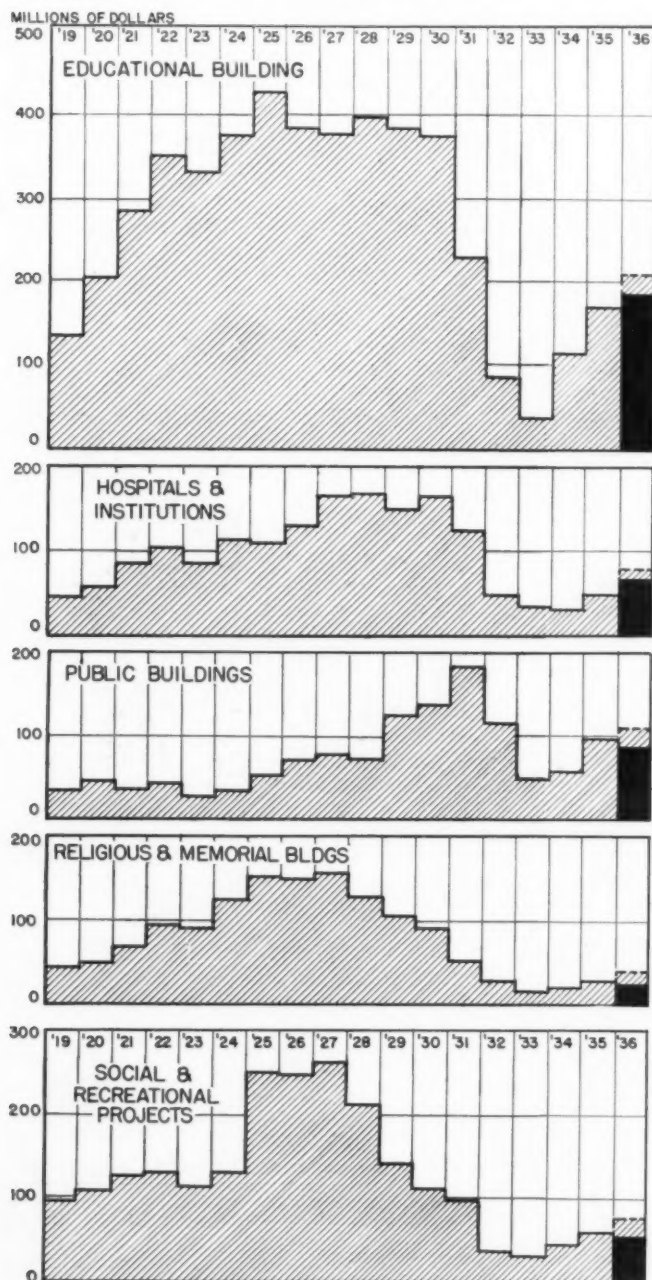
PENBERTHY INJECTOR COMPANY

Manufacturers of QUALITY PRODUCTS Since 1886
DETROIT, MICHIGAN • Canadian Plant, Windsor, Ont.

PUBLIC AND INSTITUTIONAL BUILDING SHOWS MARKED IMPROVEMENT IN 1936

By L. SETH SCHNITMAN, Chief Statistician, F. W. Dodge Corporation

CONTRACTS FOR PUBLIC AND INSTITUTIONAL BUILDING, 37 EASTERN STATES, 1919-1936



Bars denote annual totals. Black portions for 1936 indicate totals for first nine months only. Shaded portions for 1936 indicate estimates for final quarter.

Public and institutional building undertaken during 1936 in the 37 eastern states, on the basis of figures for the initial nine months, will probably show a gain of about 30 per cent over the combined total of \$402,150,300 reported for 1935 in these classifications. In 1935 public and institutional buildings represented 22 per cent of all construction undertaken in the 37 states; for 1936 this ratio will probably be about 20, or a decline of 2 points.

As may be seen from the accompanying chart, educational building is by far the most important classification under the general heading of public and institutional building. For educational building the nine-month total for 1936 has exceeded the full year's total for 1935, thus insuring a 1936 volume greater than for any previous year since 1931. The indicated total for all of 1936, however, is still little more than half as great as the average for the seven-year period, 1924-1930.

For hospitals and institutions, likewise, the nine-month volume for 1936 is already greater than the total for all of 1935; and in this instance, too, the current year's figure exceeds that for any other year since 1931. With all of this recovery hospital construction is now not yet back to the level prevailing in 1921.

Public buildings—city halls, capitols, fire and police stations, post offices, military and naval buildings—promise to show a larger volume for 1936 than was reported in 1935, with indications that the current year's volume will approximate the figure recorded for 1932. With the exception of the three-year period, 1929-1931, the current total may be considered to represent the peak volume for this class of building thus far recorded. As in 1929-1931 the current rise in public building is traceable largely to a renewed interest on the part of government in this type of building as a means of reemploying idle building tradesmen.

Religious and memorial buildings for 1936 show promise of a larger total volume than for any year since 1931 and are now only where they were in 1919. For social and recreational projects of all descriptions the 1936 total will exceed every other year's total, too, since that shown for 1931, but even with this improvement the current year's total will be much lower than prevailed annually for the entire period from 1919 through 1931.

For interiors that are modern and floors that endure...Sealex Linoleum

IN executing modern interior designs, the architect will find no flooring more suitable than Sealex Linoleum. Available in 16 plain colors, as well as a wide range of Veltone, Jaspé and geometric patterns, Sealex Linoleums can be combined to create the smartest individual effects.

Moreover, a Sealex Floor gives your client satisfactory service, and saves money through the years. For it never needs refinishing throughout its long life. And its perfectly smooth, sanitary surface is exceptionally easy to keep clean.

A Sealex Linoleum Floor, installed by our authorized contractors, is backed by a guaranty bond fully covering materials and workmanship. If your A. I. A. file does not include our complete folders on Sealex Floors and Walls, write for them. They will be sent without obligation on your part.

CONGOLEUM-NAIRN INC.
KEARNY, NEW JERSEY

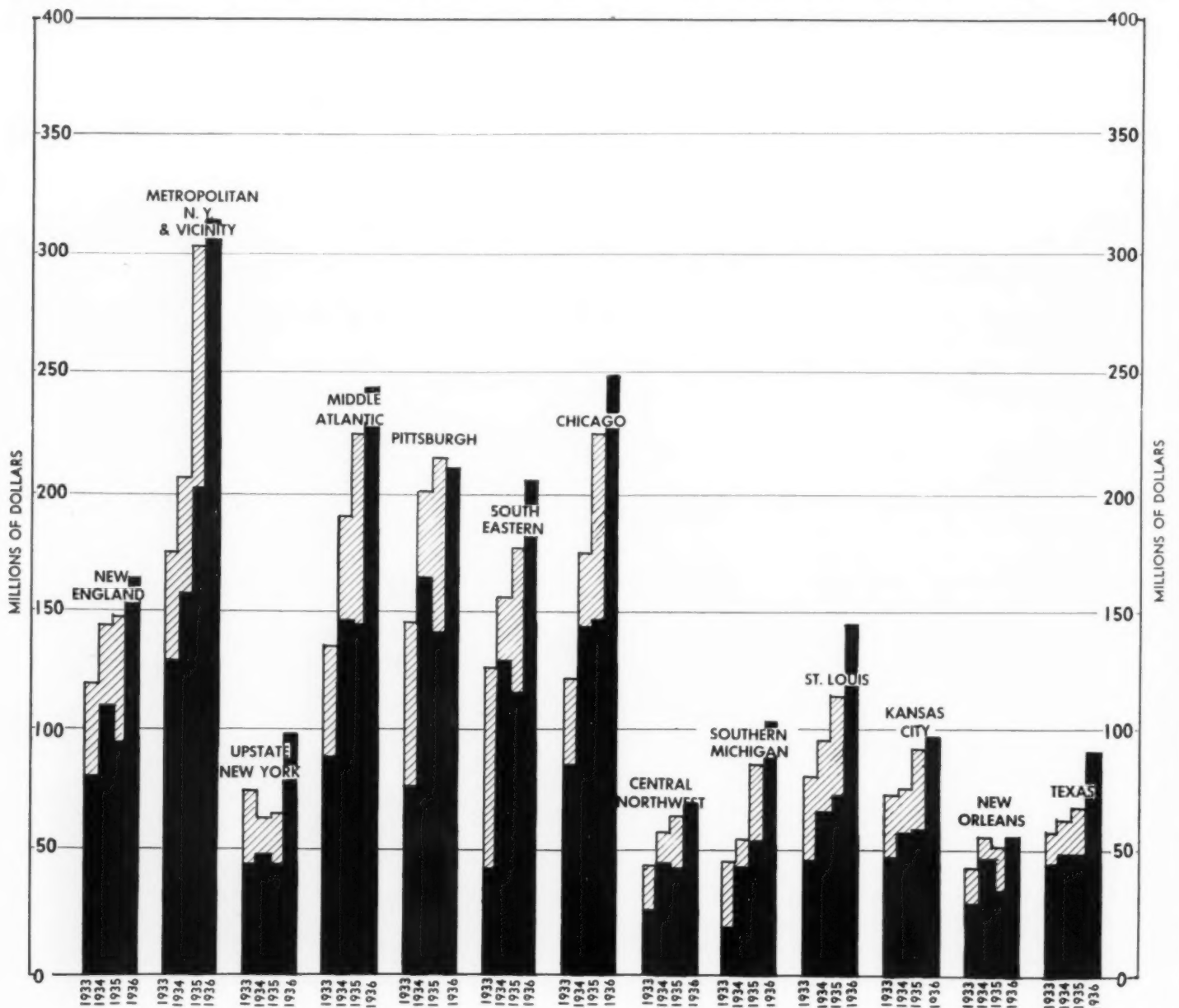


For the Crescent Billiard Hall in New Orleans, La., the architect specified specially cut floors and Sealex Linoleum has been used to carry out the modern spirit of these rooms perfectly.

SEALEX TRADEMARK REGISTERED *Linoleum Floors and Wall-Covering*

CONTRACTS FOR CONSTRUCTION, ALL CLASSES, BY GEOGRAPHIC TERRITORIES

BAR DENOTE ANNUAL TOTALS. BLACK PORTIONS INDICATE TOTALS FOR FIRST NINE MONTHS OF EACH OF THE DESIGNATED YEARS



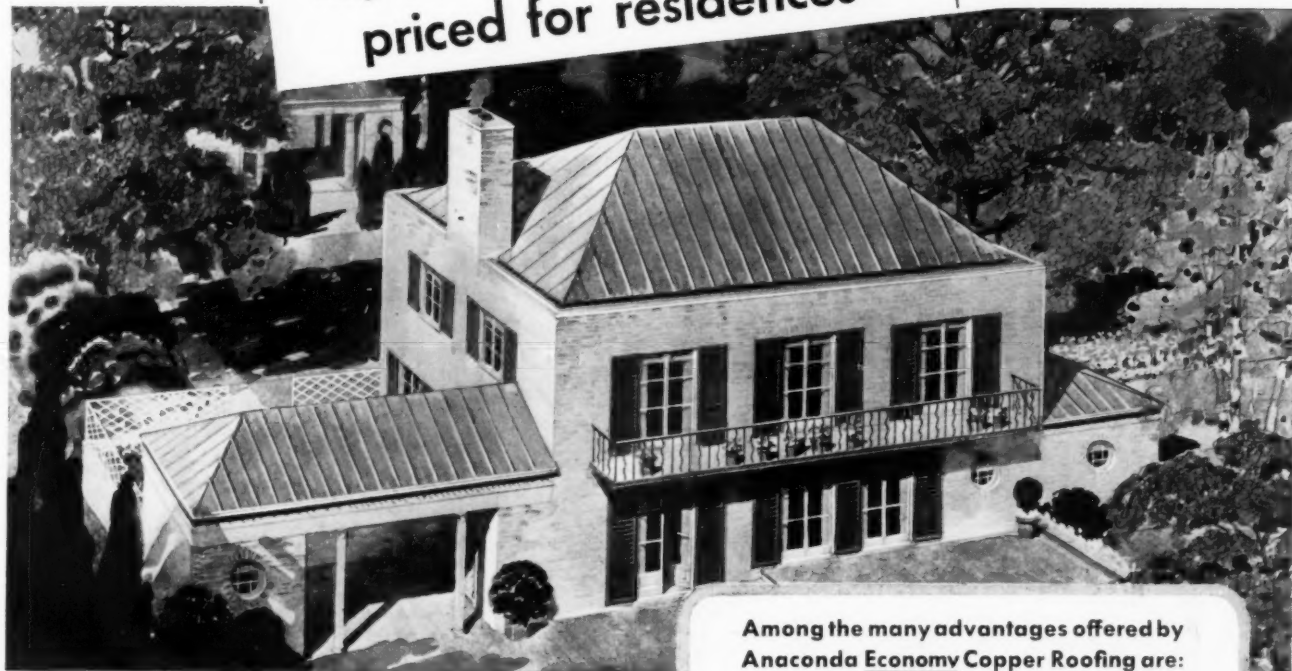
From the above chart it is clear that construction totals, covering all types of projects, for the first nine months of this year have already exceeded the full year's totals in 1935 for each major geographic area east of the Rocky Mountains, with the sole exception of the Pittsburgh area. Even for this district, on comparison between nine-month totals for the charted years, 1936 will exceed 1935 by a substantial margin.

CONTRACTS AWARDED BY TERRITORIES, VALUATION: NINE-MONTH TOTALS, 1936 AND 1935

| TERRITORY | RESIDENTIAL BUILDING | | NON-RESIDENTIAL BUILDING | | PUBLIC WORKS | | PUBLIC UTILITIES | | TOTAL CONSTRUCTION | |
|-----------------------|----------------------|---------------|--------------------------|---------------|---------------|---------------|------------------|--------------|--------------------|-----------------|
| | 1936 | 1935 | 1936 | 1935 | 1936 | 1935 | 1936 | 1935 | 1936 | 1935 |
| New England | \$ 51,541,000 | \$ 25,926,600 | \$550,833,700 | \$ 37,144,100 | \$ 47,175,900 | \$ 27,761,200 | \$ 13,178,600 | \$ 3,473,000 | \$ 162,729,200 | \$ 94,304,900 |
| Metropolitan New York | 120,932,800 | 76,428,000 | 97,337,800 | 68,587,700 | 50,527,000 | 43,257,400 | 43,684,300 | 13,843,200 | 312,481,900 | 202,116,300 |
| Upstate New York | 13,535,700 | 6,500,400 | 41,512,700 | 19,483,100 | 40,205,700 | 14,037,500 | 3,449,100 | 2,494,500 | 98,703,200 | 42,515,500 |
| Middle Atlantic | 83,304,500 | 53,589,400 | 93,886,300 | 59,974,100 | 50,289,300 | 25,730,800 | 14,217,300 | 5,408,400 | 241,697,400 | 144,702,700 |
| Pittsburgh | 62,580,400 | 34,319,700 | 95,998,400 | 54,923,000 | 34,854,900 | 40,437,100 | 19,304,800 | 11,864,300 | 212,738,500 | 141,544,100 |
| Southeastern | 62,629,100 | 38,863,700 | 64,879,000 | 38,138,400 | 65,158,500 | 31,254,000 | 14,668,900 | 7,152,400 | 207,335,500 | 115,408,500 |
| Chicago | 58,191,000 | 28,157,600 | 91,451,700 | 48,820,400 | 83,133,400 | 61,646,000 | 16,138,500 | 8,191,900 | 248,914,600 | 146,815,900 |
| Central Northwest | 11,599,400 | 7,493,700 | 19,841,100 | 9,529,300 | 32,821,800 | 22,671,800 | 4,772,200 | 2,144,400 | 69,034,500 | 41,839,200 |
| Southern Michigan | 37,195,800 | 15,216,400 | 43,779,700 | 20,482,400 | 17,300,700 | 15,955,900 | 5,002,300 | 3,168,500 | 103,278,500 | 54,821,200 |
| St. Louis | 29,564,200 | 18,681,300 | 41,182,600 | 22,744,800 | 66,944,200 | 24,570,400 | 7,174,800 | 4,038,000 | 144,865,800 | 70,014,500 |
| Kansas City | 21,597,600 | 12,758,100 | 29,799,900 | 19,545,800 | 37,263,800 | 20,889,600 | 7,565,200 | 4,598,700 | 96,226,500 | 57,793,200 |
| New Orleans | 8,242,300 | 4,288,800 | 13,601,300 | 5,441,500 | 30,891,700 | 20,778,200 | 1,848,600 | 711,700 | 54,583,900 | 31,220,200 |
| Texas | 27,116,800 | 16,683,800 | 51,232,900 | 18,907,300 | 6,740,400 | 8,402,500 | 3,947,600 | 4,586,900 | 89,037,700 | 48,580,500 |
| 37 EASTERN STATES | \$588,030,600 | \$338,907,500 | \$735,337,100 | \$423,721,900 | \$563,307,300 | \$357,392,400 | \$154,952,200 | \$71,675,900 | \$2,041,627,200 | \$1,191,697,700 |

HERE IS COPPER ROOFING

especially designed and
priced for residences



This rendering of a house with a standing seam copper roof designed by Frank J. Forster, Architect, illustrates his conception of an effective employment of copper as a durable and practical roofing material.

ANACONDA Economy Copper Roofing offers all the traditional beauty and durability of copper, minimum expense for maintenance and many other distinctive features . . . *at a new low cost.* In fact, it provides the homeowner with a combination of advantages possessed by no other roofing material.

This new durable copper roofing (standing seam construction) is offered primarily for residences. Installations in various localities throughout the country are evoking widespread interest. Anaconda Economy Copper Roofing is lighter in weight (10 ounces per square foot) and is furnished in narrower sheets which provide a space of but $13\frac{3}{4}$ inches between standing seams. This reduced width is more in keeping with residential lines, and gives

Among the many advantages offered by Anaconda Economy Copper Roofing are:

Charm and Dignity — Weathered copper harmonizes with landscaping at all seasons.

Fire-Proof — Copper roofing eliminates the flying spark hazard.

Lightning-Proof — When properly grounded, copper roofing protects the structure against lightning.

Light Weight — One of the lightest of roofing materials, copper does not need heavy, costly supporting structure.

Insulation Protection — Impervious to moisture, copper preserves the efficiency of under-roof insulating materials of cellular type.

the 10-ounce copper approximately the same rigidity and wind resistance as heavier, more expensive material in wider widths.

Anaconda Copper



THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT
Offices and Agencies in Principal Cities • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

The Architectural Record, November 1936

MARKETING NEWS OF THE BUILDING INDUSTRY



new showrooms for Congoleum-Nairn

New ideas in modern methods of floor covering display feature the new showrooms of Congoleum-Nairn, Inc., on the 16th floor of the Textile Building, 295 Fifth Avenue, New York City.

Individual niches for each roll of floor covering are elevated 26 inches from the floor giving eye-level display. One whole room is used for sample wall covering displays. Twenty-six booths show the adaptability of Sealex Wall Covering to all types of decoration. Photo murals by Margaret Bourke-White accent the north wall.

The Company Board of Directors' room, designed in "Colonial Williamsburg," adjoins the display room. From the parchment colored walls to the "plank" floor, the Colonial spirit is reflected in linoleum.

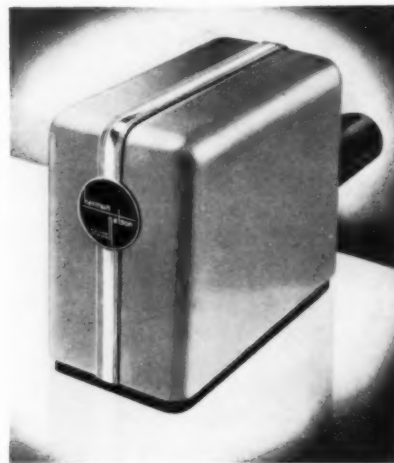
A suite of 6 model rooms—hall, living room, dining room, as well as bar, kitchen and bath—is also treated in linoleum. The construction and lighting were done under the supervision of the Kenneth H. Rippen Company of New York. The decoration throughout was planned and carried out by the Interior Decoration Department of Congoleum-Nairn, Inc.

new lighting handbook

Popularity of an authentic source of lighting facts which can be carried conveniently has led to a new edition of the Illumination Handbook by the Westinghouse Lamp Company. The new edition provides a mass of detailed information on specialized fields of illumination. Copies are available for 10c each from the Commercial Engineering Department of the Westinghouse Lamp Company, Bloomfield, N. J.

floodlighting unit

"Lunar," a Lunax floodlight for use with 200-watt lamps, has been introduced by Curtis Lighting, 1123 West Jackson Blvd., Chicago. It has a dark bluish-gray baked enamel finish, a satin aluminum base and yoke, and a polished nickel cover glass ring. A standard round base, or spike base for ground mounting, makes it suitable for garden shows, carnival booths, and for special temporary exhibits. Standard clear lens, or sanded, red, amber, blue or green lenses are obtainable.



electrical manufacturing award

First prize in the Electrical Manufacturing Magazine's second annual Product-Design Contest has been awarded to Richard H. Nelson of Moline, Illinois, secretary-treasurer and director of product design of the Herman Nelson Corporation. The award consists of the first prize certificate and a check for \$200. Mr. Nelson was adjudged the winner because of the advanced design and engineering embodied in the Herman Nelson Conversion Oil Burner. This unit is part of a complete line of heating and air conditioning equipment designed by Mr. Nelson and just introduced this year. (See *Technical News and Research* section, March issue, page 242.)

The winning product was in competition, not only with other heating equipment, but appliances of all types in which electrical design plays an important role. The three judges were Donald Deskey, Gilbert Rohde and E. R. Searles.

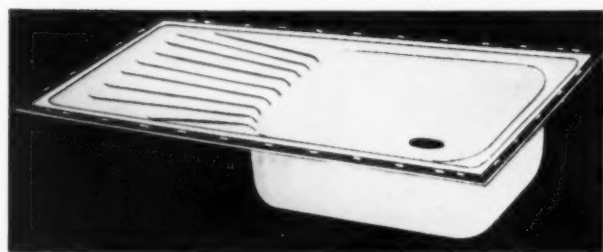


lamps for theater lighting

Reflector lamps have been developed and marketed by Climax Lamp, Inc., of Canton, Ohio, for use in signs, marquees and running borders. Light ordinarily lost in rear or at sides is redirected in more useful directions. Three- and six-watt 115-volt S-6 lamps are used. The unit is screwed in the socket. Colored light is obtained by the use of colored cover glass. A wide range of colors is available—light and dark amber, red, green, and daylight. Clear sparkling light effects are thus obtained.

midget switch

For use on oil burners and other applications where midget switches are desired, a new line of front operable general purpose type D safety switches has been announced by the Westinghouse Electric and Manufacturing Company. The switches are extremely small in size. Front operation and compact design make their use possible in many places where side operating switches cannot be used. They are available in two pole NEC and plug fuze types, also two and three pole solid neutral. Terminals and fuses are easily accessible and ample wiring space is provided. The cover may be sealed and provisions are made for locking switch in "off" position.



built-in sink

A new one-piece drain board sink for tiling-in or for building-in with cabinet units has been put on the market by the Plumbing Ware Division of Briggs Manufacturing Co., Detroit. The drain board is sunk $\frac{1}{2}$ inch to prevent water spill. The sink is designed for use with tile, linoleum or other fabricated extension surfaces. Straight edges provide watertight anchoring by screws.

The sink is made of ingot iron, one-third the weight of cast iron. It is porcelain enameled all over, underneath as well as on top. It is available in 5 colors.

(Turn to page 32 adv.)

This Factory-Fitted Storm Sash Seals Your Window Opening TIGHT

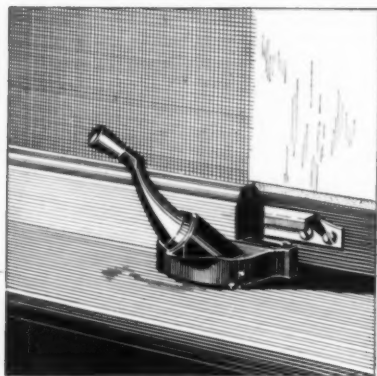


The Ordinary Storm Sash, hand-fitted on the job, is often loose

● Check the new Fenestra Inside Storm Sash for weathertightness: With the swing leaves of the outer Fenestra Casement Window wide open, move a cigarette lighter slowly around the perimeter of the Storm Sash. The flame burns without a flicker, for no air enters . . . Precision-built by craftsmen, the Fenestra rubber-baffled Inside Storm Sash seals the window opening tight. Its metal frame does not warp, swell, shrink or stick—never requires refitting. Write for details. DETROIT STEEL PRODUCTS CO., 2258 East Grand Boulevard, Detroit, Michigan.

Fenestra

MARKETING NEWS OF THE BUILDING INDUSTRY



wood casement operator

The accompanying illustration shows a newly designed angle drive operator for wood casement windows. It works through the screen. The drawing shows the screen cut away in order to see the operator channel which is fastened to the casement. The inside screen is simply notched at the place where the operator fits halfway into it. The distance required between the screen and the window is $1\frac{1}{2}$ ".

This new operator is especially convenient for opening, closing and automatically locking wood casement windows

where wide inside stools are used. It is also made adaptable for attaching to marble, tile and concrete window sills. The operator is reversible and fits any sash, 15" wide or wider. It is manufactured by the Casement Hardware Company, 406 North Wood Street, Chicago, under the trade name of "Win-Dor."

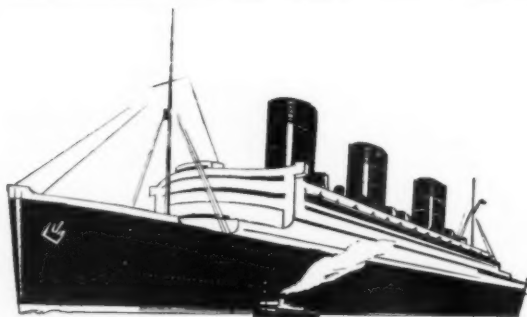
metal tape for blinds

The Cameron Metal Tape Company, Inc., Broad Street and Allegheny Avenue, Philadelphia, is manufacturing a narrow width metal tape for Venetian blinds. It folds up between the slats when the blind is raised, giving a compact bundle as the slats nest together; dust-collecting pockets are thus eliminated. Each part is interchangeable and the tape can be lengthened or shortened with ease. The tape is produced in the base metal of bronze and aluminum which readily lends itself to almost any desired color or finish.

tinted undercoats

The Devoe & Reynolds Company is introducing tinted undercoats to supplement the regular white undercoat. Previously, the painter had to tint the undercoat to the

(Turn to page 36 adv.)



BREAKING ALL RECORDS • The Queen Mary—leader in her field—is breaking all records for luxury liners. But there are other leaders in other fields whose superiority, if less spectacular, is more permanent. • Higgins American India Ink is a leader whose superiority is unchallenged. A pure carbon ink, yet even-flowing and weatherproof, Higgins American India Ink has for over fifty years been the acknowledged standard of the world.

CHAS. M. HIGGINS & CO., INC. • 271 NINTH STREET, BROOKLYN, N. Y.

HIGGINS



VITROLITE *meets today's designing problems*

Leading designers throughout the country have made use of Vitrolite's highly polished flint-like surface to produce some of the most modern examples of architecture existing today. A variety of colors, shades, and hues makes it adaptable to any decorative plan. Brilliant effects are produced in combination with metals.

Vitrolite is ideal for store fronts, theatre fronts, lobbies, corridors, bathrooms, kitchens, soda fountains, bars, back

bars, and counters. A strong factor in its favor is the ease with which it can be applied over a dry, secure surface.

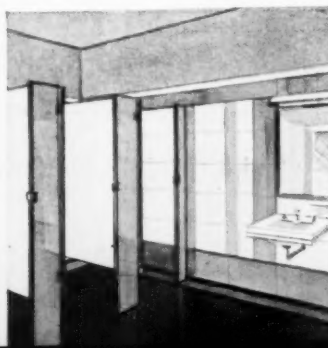
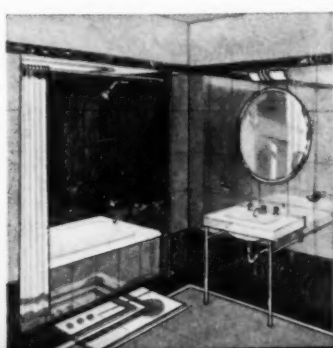
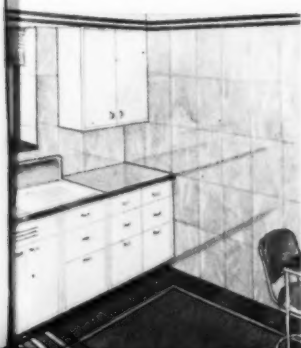
A stroke of a damp cloth keeps it new and fresh for a lifetime of service. The complete absence of checking or crazing gives it lasting durability. Any Vitrolite distributor will set up actual color combinations in Vitrolite for you. Have him show you the special surface effects obtained by sandblasting and color inlays.

VITROLITE THE *Colorful* STRUCTURAL GLASS
VITROLITE DIVISION

VITROLITE LIBBEY • OWENS • FORD GLASS COMPANY



For windows, specify L-O-F quality glass. For interiors, mirrors of L-O-F polished plate glass, clear or in colors, offer unlimited decorative architectural possibilities.



Mail coupon today VITROLITE

Vitrolite Division, Libbey-Owens-Ford Glass Company
208 W. Washington St., Chicago

Please send New Vitrolite Color Chart of 16 colors—
10 solid hues, 6 agate shades, and variety of surface
effects—and your new literature for ☐ Bathrooms and
Kitchens, ☐ Store Fronts, ☐ Construction Details.

Name

Address

Always an Usher ... never a Bridegroom ...



O. SOGLOW

How Romeo Smith got rid of Scratchitus*—now he is married.

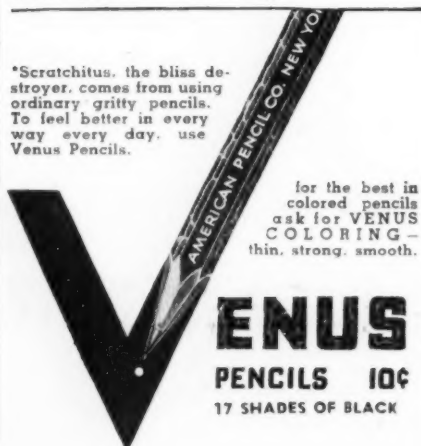
"FOR years I had the jitters my office life made my social activities hideous. Misunderstood, interior, jumpy, I'd ruin any party," said Romeo Smith.

"I'd twitch at embarrassing moments my sofa manners scared many a girl. For I was a secret sufferer from Scratchitus, contracted at the office, where ordinary, gritty pencils were doled out.

"Then my girl friend, seeking celestial happiness at a terrestrial price, urged the Venus Pencil cure, and I fell for it as I had for her. Real bliss for 10c. Now romance has ripened into marriage and I have promised to never use ordinary pencils again."

In romance or commerce, one can't expect to make good, if suffering from Scratchitus. There's only one sure relief Venus Pencils. Their smooth, scratchless lead makes writing and drawing one long, sweet song.

*Scratchitus, the bliss destroyer, comes from using ordinary gritty pencils. To feel better in every way every day, use Venus Pencils.



• This advertisement appears in Collier's and Time.

The advertisement on the left, one of a series, is written to the general public to stress the smoothness of Venus Pencils.

To professional men, like yourself, another Venus superiority is even more important—uniform grading.

This precision grading is insured by costly tests and elaborate supervision.

This means that in each of Venus' 17 degrees you can rely on every pencil being precisely like every other pencil of the same grade.

This uniformity, carefully guarded for years, is one of the reasons why Venus Pencils are the largest selling quality pencils in the world today.

Venus Pencils are also made in Toronto, Canada, by the Venus Pencil Company, Ltd., and in London, England, by the Venus Pencil Company, Limited.



AMERICAN PENCIL CO. HOBOKEN, N. J.



AIR CONDITIONING

based on Leadership in

FUNDAMENTALS

*Delco-Frigidaire
offers unmatched experience
where experience is most essential*

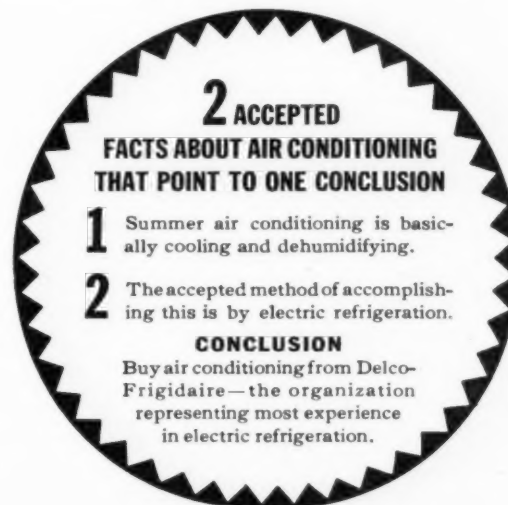
When air conditioning is under discussion—as is the case with constantly increasing frequency—your clients look to you for guidance. They expect you to point out the specialists in this relatively unfamiliar field. At the risk of seeming immodest, but in the interest of clarity, we suggest that Delco-Frigidaire is the leading specialist in air conditioning today.

We do more than assert leadership, however. We shall offer proof. The basis of summer air conditioning is cooling and dehumidifying air within rooms or buildings. The accepted method of achieving this two-fold aim is through the use of electric refrigeration.

Delco-Frigidaire represents world leadership in electric refrigeration, and thus holds unchallenged first place in that very phase of air conditioning on which the whole art is predicated.

These facts, we believe, justify us in writing Q.E.D. after the premise stated in the headlines of this page.

Our representatives are always ready to discuss air conditioning plans for air conditioning systems of all sizes and for all purposes. Many architects have found the suggestions of our engineers helpful. May we talk with you before you make your decisions in regard to your next air conditioning problem?



See Sweet's Catalogue File (Section 26/7) for details on our air conditioning equipment. For further details, or appointments with our representatives, write our headquarters at Dayton, Ohio, or telephone our New York office, Circle 7-1367.

DELCO-FRIGIDAIRE CONDITIONING CORPORATION
AUTOMATIC HEATING **DAYTON, OHIO** *AIR CONDITIONING*
PRODUCTS OF GENERAL MOTORS

THE NATIONAL AUTHORITY
ON BRICK CONSTRUCTION

Announces

The most glorious convention opportunity ever
offered jointly to the brick manufacturers and
architects of America and their families

A PILGRIMAGE

To the Historic Shrine of American Brickwork
The restored colonial capitol of Virginia

WILLIAMSBURG

to be made in conjunction with the 20th Annual
Convention of the

BRICK MANUFACTURERS ASSOCIATION
OF AMERICA

IN RICHMOND, VIRGINIA

Early in 1937

(exact date to be announced later)

THANKS to the generosity of its patriotic donor
and to the genius of the architects who have
recreated this incomparable monument, the Pilgrim-
age to Williamsburg headlines the most interesting
and unusual meeting of brick manufacturers and
architect guests ever held in the United States.

Here is the authentic shrine of American brickwork.
Here is linked present and future with those glorious
decades in which brick made its earliest contributions
to the enduring beauty of American architecture.

Here among other features of the Pilgrimage, will
be presented the most comprehensive display of
"colonial" brick manufacture ever exhibited.

From Richmond, Williamsburg, and side trips to
Yorktown and Jamestown, brick manufacturers
and their guests will return inspired as never
before with a new faith in the future of brick, and
invested with a new authority for its promotion.

This early announcement of a great national
joint meeting of brick manufacturers and
architects permits unhurried preparation.
Complete details regarding rail fares, accom-
modations, and daily schedules of the entire
week's program will be forwarded on request.

THE BRICK MANUFACTURERS ASSOCIATION
OF AMERICA

2121 Guarantee Title Building

Cleveland, Ohio

NEWS of the BUILDING INDUSTRY

(Continued from page 32 adv.)

approximate shade of the topcoat. This step is eliminated
by selecting two neutral shades which can be used with any
standard color scheme.

counter edge molding

A stainless steel molding has been introduced by the
Pyramid Metal Company, 455 North Oakley Boulevard,
Chicago. It is made to fit counter tops varying from $\frac{3}{4}$ " to
2" in thickness.

self-filling humidifier

A new model humidifier which will humidify an average
8 to 10-room house, office or apartment has been introduced
by Vigor-Aire Corporation, 127 South Fifth Street, Phila-
delphia. It is self-filling, automatically controlled, evapo-
rates up to 12 gallons of water a day, and costs about 1 cent
a day to operate. It is easily installed on any convenient
radiator or near a hot air register.



home air-duct system

Gar Wood Industries, Inc., Detroit, has announced the
development of a new, predesigned, air-duct system for
automatic home heating and air conditioning.

Runouts from the trunk lines to the grilles are limited
to four sizes, all a single depth to fit a standard 2" x 4"
partition. These sizes are maintained for the entire run
without transformation. The resulting simplicity makes
standardization possible. Every trunk line is standardized.
The number of stock parts is reduced to one standard-sized
panel for each depth. If a single depth trunk is used, only
one part is employed.

The new system enables a dealer to sell the heating and
air conditioning equipment and ducts as a unit, completely
installed and ready for use.

winter air conditioners

The Surface Combustion Corporation, Toledo, is intro-
ducing its 1937 line of Janitrol conditioners.

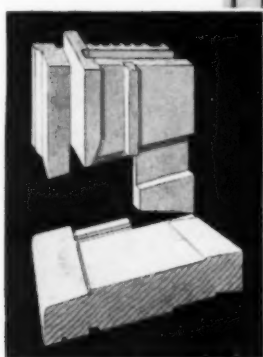
The CF model conditioner is finished in soft opalescent
azure, with chrome trim and rounded corners. An entirely
new burner is one of the chief features. Maximum heat
exchange is secured by a series of copper rods with a
multiplicity of fins.

(Turn to page 38 adv.)

IMPROVED COUNTERBALANCING WITH WEIGHTS
GUARANTEES LIFETIME—TROUBLE-FREE SASH OPERATION

Andersen NARROLINE

DOUBLE HUNG WINDOWS



ANDERSEN LEAKPROOF LOCKED SILL JOINT with steep sill slope and chamfered blind stop to insure quick drainage, and the weathertight wide blind stop, make the NARROLINE Frame LEAKPROOF.



In COMPLETE UNITS

ANDERSEN Narroline Double Hung Windows are simple in design and construction, easy to assemble and install.

The leakproof frame is of improved design with narrow mullions, $2\frac{3}{4}$ " wide, and narrow casing.

The Narroline Unit takes standard double hung sash, screens and storm sash as furnished by lumber and millwork dealers. *These can be obtained completely fitted and ready to install.*

All parts of the Narroline frame are protected against decay and termites with the Andersen-Bruce Preservative moisture proofing treatment.

Andersen Bronze Weatherstrips have a proved efficiency rating of 86% elimination of air leakage, the highest of any weatherstrips on the market. They save fuel, keep out dust and add greatly to home comfort the year 'round.



Improved Counterbalancing

To provide easy and unfailing sash operation, the time-tested principle of weight counterbalancing has been retained. The space required for weights has been greatly reduced by the use of a specially designed weight with pulley wheel which replaces two ordinary weights. Andersen noiseless and wear-proof pulleys and steel sash chain that will not break or wear out, insure a lifetime of satisfactory and trouble-free sash operation.

MASTER FRAMES

Leakproof locked sill joint. Steep sill slope with blind stop chamfer for complete drainage. Weather-tight, wide blind stop and insulated mullion. Noiseless pulleys. Factory primed joints. Save time and money by specifying Master Frames.

WOOD CASEMENTS

70% less air leakage! Meets Air-Conditioning needs! Wood parts protected against decay and termites with Andersen-Bruce preservative. A modern, weathertight unit; removable double glazing and spring bronze weather-stripping.

USE THIS CONVENIENT COUPON

ANDERSEN FRAME CORP.
Bayport, Minnesota

AR116

Please send complete details on:

- | | |
|---|--|
| <input type="checkbox"/> Andersen Master Frame | <input type="checkbox"/> Andersen Narroline Unit |
| <input type="checkbox"/> Andersen Casement Unit | <input type="checkbox"/> Andersen Basement Unit |

NOTE: See your dealer for a demonstration with working models on any Andersen product—or write us.

NEWS of the BUILDING INDUSTRY

(Continued from page 36 adv.)

The CA series of conditioners is finished in tapestry blue crinkle with chrome trim. Chief differences between these and the CF line are in heat exchangers and humidifiers. Heat exchangers, of which there are two, are of heavy steel plate with staggered baffles corrugated vertically. The humidifier is of the pan type.

A new gravity heater is finished in tapestry blue crinkle.

boiler-air conditioner

Since the introduction of the Fitzgibbons Boiler Air Conditioner for "split-system" residential air conditioning, enlargements have been made in that line so that it now includes four sizes ranging in capacities from 102,000 B.t.u.'s to 163,100 B.t.u.'s. Demand for a separate air conditioning chamber for installation with a Fitzgibbons boiler became apparent as wider discrepancies arose in radiation requirements and air conditioning requirements.

The Fitzgibbonsaire, a floor unit plenum chamber constructed in ten different capacities ranging from 91,300 B.t.u.'s to 461,700 B.t.u.'s, has been introduced for this reason. The unit need not be placed directly alongside of the boiler. It can be in any location within the home, since steam lines can be carried from the boiler. An additional feature is the domestic hot water supply furnished year round instantaneously and without a storage tank.



small home heating system

The introduction of a new, complete heating system for the very small home has just been announced by the Excelso Products Corporation of Buffalo, a division of the American Radiator Company. The system is known as "Celvec." It combines products which have been manufactured separately by the American Radiator Company.

No more fuel is required in operation than in the ordinary stove or base-burner. One of the advantages claimed is its adaptability for new or old homes without expensive installation charges.

The heart of the system is the Excelso Phaeton Heater. This heater is installed in the firepot near the dome and absorbs the heat from the fire, assuring necessary hot water radiation for the second floor rooms. The Celvec system

(Turn to page 40 adv.)



This Program Sound system is ideal for...



HOTELS



HOSPITALS



SCHOOLS



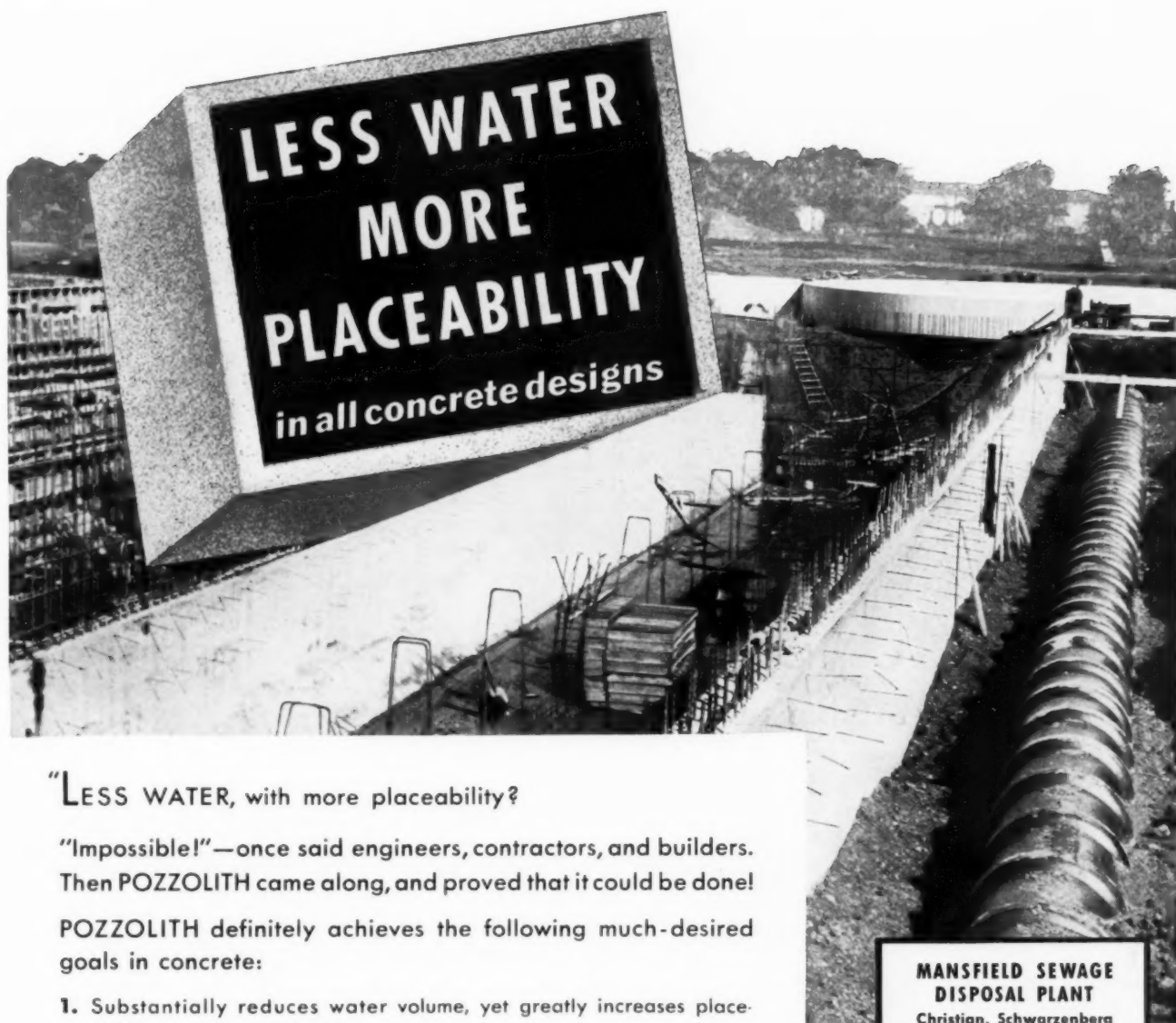
AUDITORIUMS

Western Electric's new sound distributing equipment is high in quality, low in cost. In one compact unit, it combines voice or music pick-up—radio—record reproducer—and keys for selecting loud speakers in as many as 60 locations.

Graybar's experts will gladly help you plan installations and furnish estimates free of charge. For booklet and full details, write Graybar Electric Company, Graybar Building, New York, N. Y.

Western Electric
PROGRAM SOUND SYSTEMS

Distributed by GRAYBAR Electric Co.
In Canada: Northern Electric Co., Ltd.



"LESS WATER, with more placeability?"

"Impossible!"—once said engineers, contractors, and builders. Then POZZOLITH came along, and proved that it could be done!

POZZOLITH definitely achieves the following much-desired goals in concrete:

1. Substantially reduces water volume, yet greatly increases placeability, in any concrete mix.
2. This reduction in water naturally and inevitably increases density. Hence stronger, more durable concrete.
3. Highly concentrated pozzolanic activity imparts added resistance to corrosion and other destructive factors, important on many projects.
4. Low in first cost . . . POZZOLITH greatly reduces ultimate concrete costs.

Names of engineers who have used POZZOLITH, and a list of jobs wherein it has been used, is available. We are ready to let POZZOLITH prove itself before your own eyes. Ask for a demonstration now!

THE MASTER BUILDERS CO.
CLEVELAND, OHIO

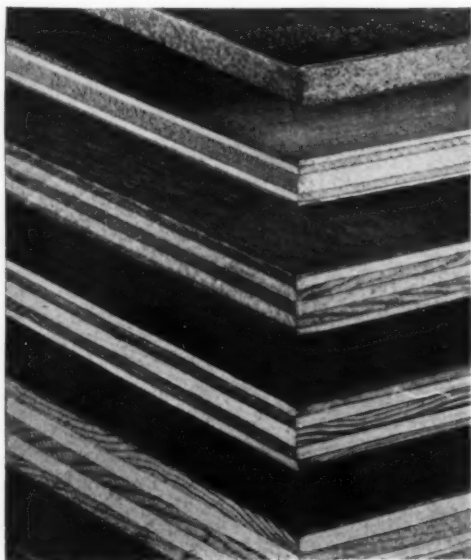
*In Canada: The Master Builders Company,
Ltd., Toronto*

MANSFIELD SEWAGE DISPOSAL PLANT

Christian, Schwarzenberg & Gaede, engineers, associated with Mr. George B. Sowers, consulting engineer, say . . . "Our great interest in Pozzolith was its ability to produce workable concrete with a reduction in the amount of water, as this is, of course, the way to get greater density."

POZZOLITH

MASTER BUILDERS



TEGO-BONDING

MEANS EXPOSURE-PROOF
PLYWOOD

PLYWOOD that is really proof to water, weather and mold has become an established commercial product in the past two years.

Tego-bonding,—gluing with dry resin film adhesive,—has made the availability of such a material a fact.

Tego-bonded plywood offers not merely *improved* resistance to moisture and exposure breakdown. It offers *permanent* assurance against delamination due to glue deterioration, whether from water, climate changes or mold growth.

Tego Glue Film is manufactured by THE RESINOUS PRODUCTS AND CHEMICAL CO., Inc., Philadelphia.

RESINOUS  PRODUCTS

NEWS of the BUILDING INDUSTRY

(Continued from page 38 adv.)

supplies humidified warm air heat for the first floor and radiator heat for second floor.

The system, when assembled, is intended to sell at \$54.50 and upwards.

re-styled radiators

A small tube-type radiator has been added to its line, according to an announcement by the National Radiator Corporation, Johnston, Pa. The new radiator—known as the National Art line of radiation—represents entirely new styling. Vertical lines and setback planes are utilized. Even the feet have been changed so that the design is carried uninterruptedly from floor to top.

Only minor piping changes are required in order to replace older types of radiation with the National Art line. The units are made in three widths: 3, 4 and 5-tube, and in heights ranging from 19" to 26". The radiators are of cast iron construction and are assembled in any length in multiples of 1½". The radiator is of push nipple construction, and can be furnished legless, according to the manufacturer's announcement.

NEW ADDRESSES

R. F. Beresford, architect, is now located at 810 Eighteenth Street, N.W., Room 809, Washington, D. C. His former address was 1713 K Street, N.W.

Gerald S. Adelman and Lester Cohn (Design Associates) have recently opened an office for the practice of architectural and display design at 104 South Michigan Avenue, Chicago, Ill.

Richard S. McCaffery, Jr., and Maurice Gauthier announce that they have formed a partnership for the practice of architecture under the firm name of McCaffery & Gauthier, with offices at 9 East 41 Street, New York City.

Joseph J. Ott and Robert T. Handren have established an office for the practice of architecture at 49 West 45 Street, New York City.

W. F. Ruck, architect, announces the removal of his offices to 940 South Figueroa Street, Los Angeles, Calif.

The new address of J. W. Minick, architect, is 503 North 2 Street, Harrisburg, Pa.

Announcement of the opening of an office for the general practice of architecture at 1600 Alliance Life Building, Peoria, Ill., is made by Carter Edmund Hewitt.

Louis A. Walsh, architect, is now located at 111 West Main Street, Waterbury, Conn., having moved from 69 Center Street.

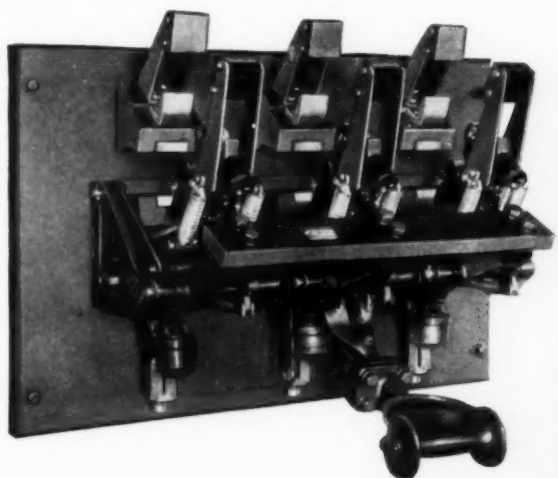
FOR ADDED SATISFACTION....

Because of Better Performance... Less Attention

IN addition to fine appearance and high-quality construction throughout, G-E air circuit breakers have one supreme feature that means better protection. The main contacts are *solid, silver bars, welded on*. Heating is reduced. Heating troubles are prevented. Cleaning of the contacts is unnecessary.

Moreover, the bridging member of the movable contacts is

solid copper. In the closed position, it is held in place by a powerful spring which is not required to carry current. No troubles from weakening of contact pressure that depends on the spring action of current-carrying laminated bridging members. Pressure on G-E contacts is permanent. Specify G-E and get these advantages. General Electric Company, Schenectady, N. Y.



"Here's one of
the greatest of all
breaker features—
SOLID
SILVER CONTACTS"

GENERAL  **ELECTRIC** 860-9

REVIEWS OF CURRENT BOOKS

CATCHING UP WITH HOUSING.

By Carol Aronovici and Elizabeth McCalmont. Beneficial Management Corp., 15 Washington Street, Newark, N. J.

First of a series of manuals to be issued by the Beneficial Management Corporation on housing, health, employment, consumers' problems, vocational guidance, etc., *Catching Up With Housing* is a condensed résumé of the history of housing in this country. Aronovici and McCalmont have correlated this material, describing the activities of interrelated government agencies in the field, the various foundations which from time to time have experimented in housing, the work of professional groups—Housing Study Guild, National Association of Housing Officials, etc.

Presenting no new material, and valuable chiefly as a reference work, *Catching Up With Housing* is nevertheless significant in that it marks the entry of the personal finance companies into the arena of housing. Miss McCalmont, herself Personnel Director of Beneficial Management, points out the increasing need for such a manual: "Merely to loan money to persons in temporary need is not always to render the maximum service. . . . The financial emergency is in almost every instance accompanied by need for advice and guidance along related lines." Such rehabilitation demands coordinated sources of information on housing, health and the like for the finance companies; hence this manual and the others which will follow.

HOUSES FOR MODERATE MEANS.

By Randall Phillips. Charles Scribner's Sons, New York City. Price, \$2.75.

This collection of small and medium-sized English houses will be interesting to Americans chiefly because of the light it throws on the present organization of the building industry in England. There is a strange contradiction between the Introduction—in which Mr. Phillips briefly (and inadequately) discusses "Materials" and "Equipment"—and the houses themselves, many of which show a marked "International" influence. The contradiction

lies in the fact that British building materials and equipment lag far behind the standards already so commonplace in America; yet a sizable portion of these houses are flat-roofed, corner-windowed, smooth-surfaced—i.e., "modern."

This would seem to indicate that although the "modern" style has a much wider acceptance in England than here, it actually covers a structure much less up-to-date than the average "Cape Cod" cottage in the average American suburb, especially as regards air conditioning, plumbing, lighting, and kitchen equipment. And this in turn implies that there is no essential connection between "modern" architecture and modern standards of manufacture, assembly and performance.

Houses for Moderate Means will also prove somewhat of a curiosity here in terms of planning. Baths are far below the American average. Kitchens are large, with sculleries, and closets for stores, groceries, and fuel. Dining space is often informal and poorly related to the kitchen—in most of these houses service from kitchen to dining room traverses the entrance hall—while in others a hatch between dining room traverses the entrance hall—while in others a hatch between seem slightly impractical to the American designer of "houses for moderate means," since servants in this price class are out of the question.

THE ALLOYS: A COMPLEX NEW TECHNOLOGY

ENGINEERING ALLOYS—NAMES, PROPERTIES AND USES.

By N. E. Woldman (metallurgical engineer, Eclipse Aviation Corp.) and A. J. Dorublat (professor of metallurgy and chemistry, Post-graduate School, U. S. Naval Academy). Publisher: The American Society for Metals, 7016 Euclid Avenue, Cleveland. 600 pages; tables. Price, \$10.

SYMPOSIUM ON HIGH-STRENGTH CONSTRUCTION METALS.

Publisher: American Society for Testing Materials, 260 S. Broad Street, Philadelphia. 126 pages; charts and tables. Cloth, price \$1.50; heavy paper cover, price \$1.25.

CORROSION RESISTANCE OF METALS AND ALLOYS.

By Robert J. McKay and Robert Worthington. An

American Chemical Society monograph, issued by The Chemical Catalog Company, Inc. Publisher: Reinhold Publishing Corp., 330 West 42 Street, New York. 492 pages; charts and tables. Price, \$7.

BETHLEHEM ALLOY STEELS.

Catalog—107. Publisher: Bethlehem Steel Company, Bethlehem, Pa. 375 pages; illustrated.

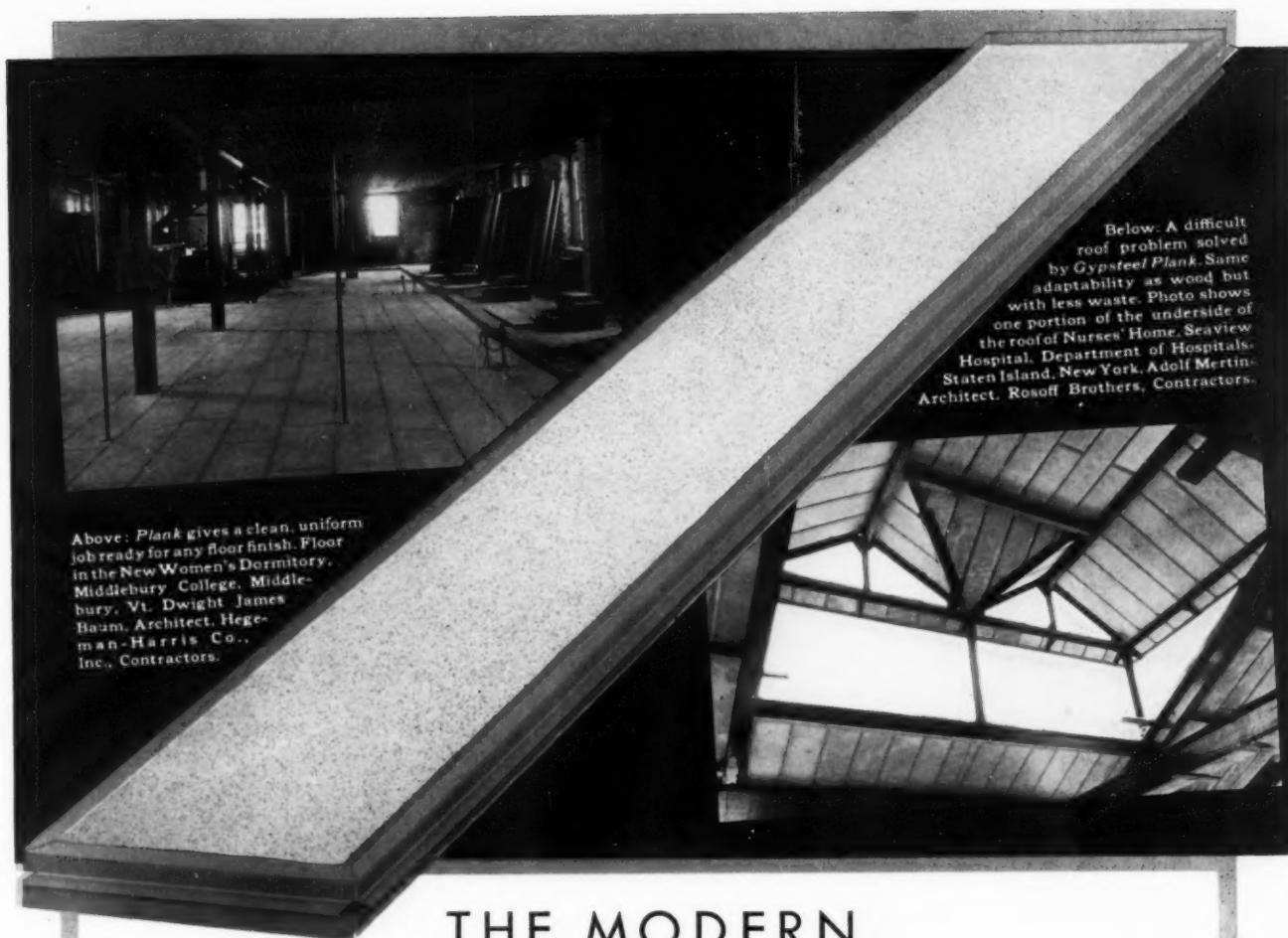
THE STEEL PHYSICAL PROPERTIES ATLAS.

By Charles Newman Dawe. Publisher: American Society for Metals, Cleveland. 90 pages; charts. Price, \$2.50.

The building designer who has been wondering how many new alloys have been developed in the industrial world in recent years will find an answer in *Engineering Alloys*; there are 8,200 important commercial alloys to date! They are all neatly tabulated according to trade names and composition. Cross-references and an efficient index give easy access to condensed facts about their properties, uses and manufacturers. The book is virtually a dictionary of alloys; its main significance to the building designer is the fact that the alloys have become so numerous and complex that such a volume is now an industrial necessity.

A more detailed discussion of metals and alloys—particularly those constructional alloys involved in buildings, ships, automobile bodies, airplane wings, tanks, and the like—is to be found in the A.S.T.M. *Symposium*. This volume contains 5 technical papers presented at the A.S.T.M. regional meeting held last March in Pittsburgh. The papers give the latest information on (1) aluminum and magnesium alloys, (2) copper alloys, (3) nickel alloys, (4) carbon and low-alloy steels, (5) corrosion-resisting steels.

The high degree of specialization reached in this field of manufacture is apparent in a reading of the monograph on corrosion, sponsored by The American Chemical Society. This publication series is intended to present facts which will enable investigators to correlate their own work with that of specialists in other lines of research. The monograph surveys progress already made and points out new directives for research. It is a scholarly



Above: Plank gives a clean, uniform job ready for any floor finish. Floor in the New Women's Dormitory, Middlebury College, Middlebury, Vt. Dwight James Baum, Architect, Hegeman-Harris Co., Inc., Contractors.

Below: A difficult roof problem solved by Gypsteel Plank. Same adaptability as wood but with less waste. Photo shows one portion of the underside of the roof of Nurses' Home, Seaview Hospital, Department of Hospitals, Staten Island, New York, Adolf Mertins, Architect, Rosoff Brothers, Contractors.

THE MODERN FIRE-SAFE STRUCTURAL UNIT for floors and roof-decks

For many years architects have felt the need of a structural unit that would enable them to erect low-cost fire-safe floors and roof-decks with the ease and speed that marks the construction of wood floors and roof-decks.

Gypsteel Plank* fills this need. It handles like wood—cut, sawed, nailed or bored—is fire-safe, durable, low in cost... made-to-order for fast construction... offers all the advantages of poured mixtures with none of their inconveniences in installation.

Gypsteel Plank is the modern structural unit for



Steel-bound edges, tongued and grooved, mesh together to form 2" I-Beam

fire-safe floors and roof-decks. May we send you our illustrated Bulletin showing how and where you can use Plank to get a strong, uniform job at lower cost?

GYPSTEEL PLANK is a complete structural unit shaped like lumber, light in weight, made of extra dense, nailable gypsum with a steel wire mesh reinforcement through the center. Sides and ends are bound with galvanized copper-bearing steel, tongued and grooved. Plank is vermin-proof, termite-proof, will not shrink or warp.

*The term Plank as applied to cementitious building products is a registered trade-mark of The American Cyanamid & Chemical Corporation.



GYPSTEEL PLANK

AMERICAN CYANAMID & CHEMICAL CORPORATION
Structural Gypsum Division
38 Rockefeller Plaza, New York, N. Y.

Gentlemen: Please send me, without obligation, your GYPSTEEL PLANK Bulletin.

Name..... Title.....
Firm.....
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A.M. 12-36

performance, well worth the study of any one interested in either theoretical considerations or practical facts about the corrosion behavior of specific metal and alloy groups.

The Bethlehem handbook gives specialized information about a single group of alloys—the steels. Besides being a catalog of working data, the book offers definitions and describes fabrication and testing facilities. A notable feature is the color charts of heat colors and temper colors corresponding to the actual colors observed on pieces of steel under accurate temperature control. The physical properties of popular steels and steel castings are also presented, in the convenient form of graphs, in the *Steel Atlas*.

So far as the building designer is concerned, this array of new knowledge is important for the emphasis it places on the trend toward increasing specialization, increasing standardization and increasing integration in all phases of industrial production. The requirements of precision control imply an increasing number of new alloys. Changes are rapid. Many of the products listed in *Engineering Alloys* are already obsolete and have been withdrawn from the market; many others are now being developed, and the authors anticipate frequent revisions and enlargements of their book so that it may be kept currently up to date.

To an increasing extent the metallurgists are able to design specific materials to serve specific needs. With the new industrial division of work, the task of the building designer becomes primarily the specification of standards of use. It is then the task of the industries to specify and to produce the different materials which will meet the different structural requirements.

OLD HISTORIC CHURCHES OF AMERICA. By Edward F. Rines, New York, The Macmillan Company, 1936. Price, \$6.

TRINITY CHURCH IN NEWPORT, RHODE ISLAND. By Norman Morrison Isham. Boston, Printed for the Subscribers, 1936.

American colonial architecture has had two distinct appeals. The tourist sees it as a record of the past in vivid

human terms. The architect has considered it, if not as a model for the present, at least as a form of art as appropriate and expressive that its very minutiae deserve careful study. These different approaches have been splendidly expressed in two new books.

Under the auspices of the National Society of Colonial Dames of America Mr. Rines has published a wealth of anecdotes upon our old churches. On the famous colonial buildings his book adds little to the information that can be found in the many such, but his real contribution is the facts he gathered about the less well known of the three hundred odd examples he visited. Although his primary purpose was "to unearth and preserve in permanent form some of the many associations and romantic stories of our historic church structures," he has set down the date and mentions the chief alterations and restorations of every building. The book, however, is hardly of value except as a source of information, for the comments are not tied together by any general analyses of style or historical development, and the illustrations which might have made the book an essential work of reference are few in number. Apparently they were chosen for their artistic value as photographs instead of as a complement to the text, and so in general only the most familiar churches are shown.

Mr. Isham's monograph on Trinity Newport is impressive not merely because he has set down the whole history of the fabric with complete documentation, but because he has noted every detail of the building, no matter how slight, and has interpreted it in the light of the parish records and his great knowledge of the colonial period. Indeed, the value of the book is less his presentation of the facts on this one church than his realization of their significance in the basic problems of American eighteenth century architecture. This has led him not only to the consideration of such obvious problems as the relation of Trinity to Christ Church, Boston, and of both to the Wren churches in London, but also to the study of nonexistent buildings such as the first Kings Chapel in Boston, and of such details as the sizes of panes of glass available in the eighteenth century. Hence this work, nar-

row though it is in scope, is a mine of information which should make it a standard reference book for anybody who wishes to study American colonial architecture.

JOHN P. COOLIDGE.

To the Editor

Dear Sir:

Your review of Vol. III of "The Evolving House" in your issue for October 1936, includes two basic misconceptions of the Cubical Modular Method of design which are so importantly at variance with the theory propounded that they require correction. We shall appreciate your publishing the following statement in an early issue.

In the Cubical Modular Method of design the cube is used as a unit of measure or matrix of design as your reviewer intimates in the early part of the review. It is never suggested, as he later seems to think, as a structural part. It has no existence other than as a convenient method of presenting pictorially to the average reader a rather abstract theory of design. The theory could have been developed without mention of a cube. It is very unlikely that any house construction would ever include physical parts that are actually even approximately in the form of a modular cube.

Furthermore, the side dimension of the cube will probably be of the order of the thickness of the structural wall, but not necessarily four inches. It happens that four inches appears to suit approximately certain familiar conventional types of construction, but it is not possible to predict yet just what the best size of module will be. It might be three or two inches, or some intermediate fraction. What the explicit dimension is to be must be a matter of further research.

The conception of this method of design can be made clearer if we suppose that a manufacturer of mass-produced houses already has a design of rectangular house construction which he wishes to re-design according to the Cubical Modular Method. What would be the essential results of such re-design? The number of parts and members would be little, if any, altered. The variety of sizes and shapes of these parts would probably be reduced, and a simple relationship would exist in the variation of corresponding dimensions. Most important, the manufacturer would be able to build, from a stock of these same parts, an unlimited variety of different houses, with a complete flexibility of layout and architectural treatment. The basic objective is a simplification, rather than a multiplicity, of component parts.

Very truly yours,
BEMIS INDUSTRIES, INC.
By ALAN C. BEMIS, President.

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"The
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YOUR client gets a superior product at an attractive price when you specify one of the units shown above to keep his basement free from seepage water—or the specialties shown below to modernize his hot water heating plant. Thrifty clients particularly appreciate these thrifty products.

Penberthy Products are carried in stock by jobbers everywhere.

PENBERTHY HOT WATER HEATING SPECIALTIES

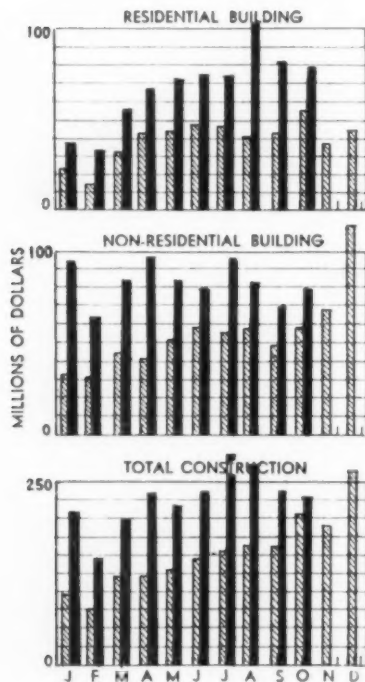
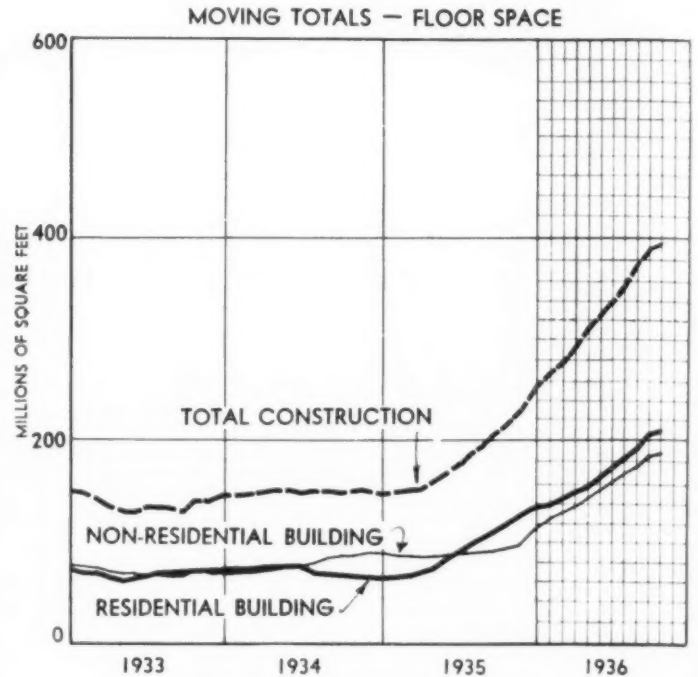
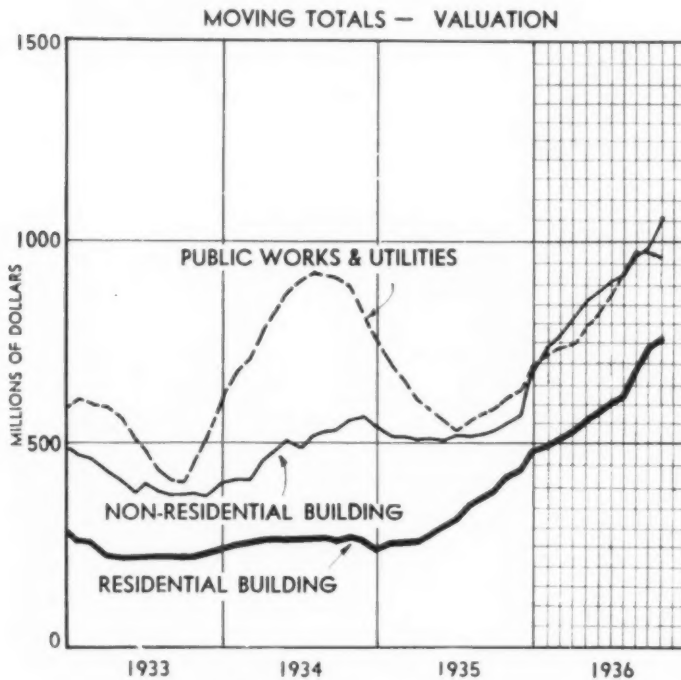


PENBERTHY INJECTOR COMPANY

Manufacturers of QUALITY PRODUCTS Since 1886
DETROIT, MICHIGAN • Canadian Plant, Windsor, Ont.

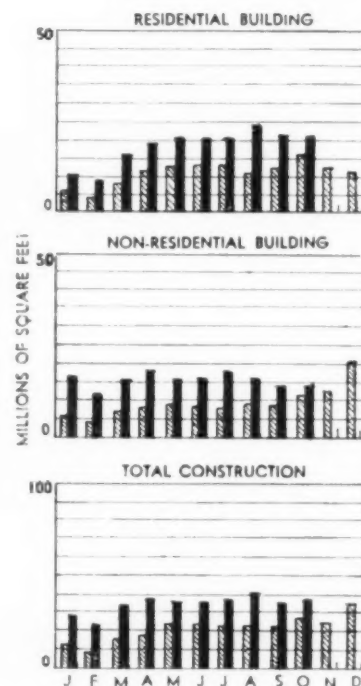
CONSTRUCTION CONTRACTS IN THE 37 EASTERN STATES

On a dollar basis residential building still lags behind both nonresidential building and public works and utilities. This is an abnormal relationship, correction of which may likely occur late in 1937, or early in 1938.



Charts shown to either side picture the actual month-to-month data on construction awards. Contracts have been charted on both a valuation and a floor space basis and cover both new and alteration work. It will be noted that the scales are different for each of the respective charts; hence each chart is to be read separately. Figures for the months of 1936 are shown in solid black; the months of 1935 are shown by the shaded bars. Thus the reader is enabled to make quick comparisons between the corresponding months of 1935 and 1936.

■ 1936 ▨ 1935



Charts shown above depict twelve-month moving total curves plotted on the end-month; i.e., the figure plotted for a given month represents the total for the twelve months ending with that month. This type of curve thus registers the trend of a given movement and effectively eliminates the seasonal element; a rise in the curve signifies that the figure for the current month was higher than that for the corresponding month of the previous year; and conversely, a decline in the curve signifies that the total for the current month was below that of the corresponding month a year earlier.

■ 1936 ▨ 1935

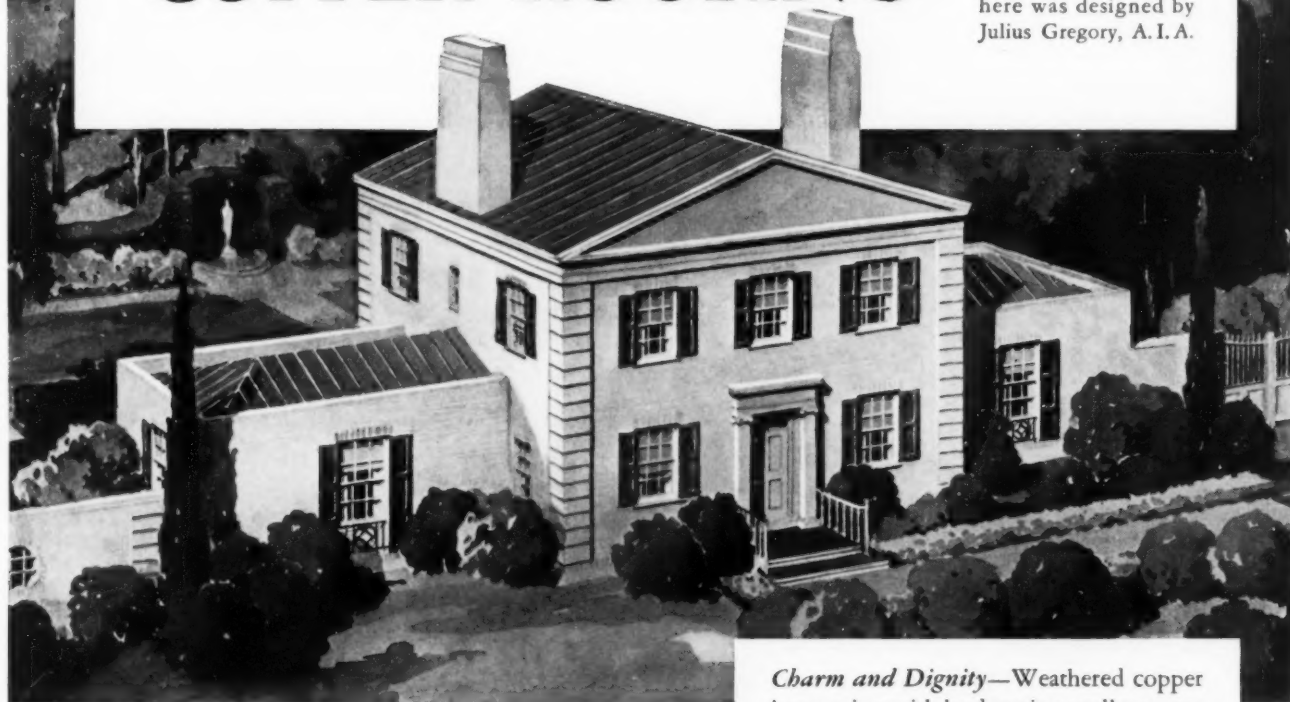
ANACONDA

Economy

COPPER ROOFING



The residence illustrated here was designed by Julius Gregory, A.I.A.



ANACONDA *Economy* Copper Roofing offers the beauty and durability that is traditional of copper...at a new low cost. This is possible because *Economy* Copper Roofing weighs 10 oz. per square foot, instead of the 16 oz. copper formerly used. To compensate for the thinner gauge, it is furnished in 16-inch sheets which provide spacing of about 13¾ inches between standing seams. This width is in keeping with residential lines and gives the 10 oz. copper about the same rigidity and wind resistance as heavier material in wider widths. Its many other advantages (see panel at right) can be found in no other roofing material.

Charm and Dignity—Weathered copper harmonizes with landscaping at all seasons.

Fire-proof—Copper roofing eliminates the flying spark hazard.

Lightning-proof—When properly grounded, copper roofing protects the structure against lightning.

Light Weight—One of the lightest of roofing materials, copper does not need heavy, costly supporting structure.

Protects Insulation—Impervious to moisture, copper preserves the efficiency of under-roof insulating materials of cellular type.

26190

Anaconda Copper

THE AMERICAN BRASS COMPANY • General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

BUILDING IMPROVEMENT OVER 1935 APPROXIMATES 70 PER CENT

By L. SETH SCHNITMAN,

Chief Statistician, F. W. Dodge Corporation

Building improvement in 1936 has been substantial. All classes of buildings have participated to make the total for the first ten months about 70 per cent greater than the figure reported during the corresponding period of 1935. The recovery has been due as much to gains in private building as to increased activity on public projects. Improvement, too, has been rather well distributed geographically. Finally, 1936 marks the third year of building recovery; because of the rhythmic nature of the industry, this fact augurs well for even further gains.

Commercial building operations during the first ten months of 1936 totaled about \$203 million in the 37 eastern states, for a gain of 45 per cent over the comparative 1935 figure. Improvement in commercial types was not confined to any single classification—public garages, service stations, banks, office buildings, stores, and public warehouses each contributed to the general betterment.

For factory building the ten-month figure amounted to \$161 million for an increase of almost 80 per cent over the total shown during the initial ten months of 1935. Here, too, gains were general with the more important classifications participating in the improvement. The most significant increases occurred in the building of factories producing food products, textiles, and petroleum products.

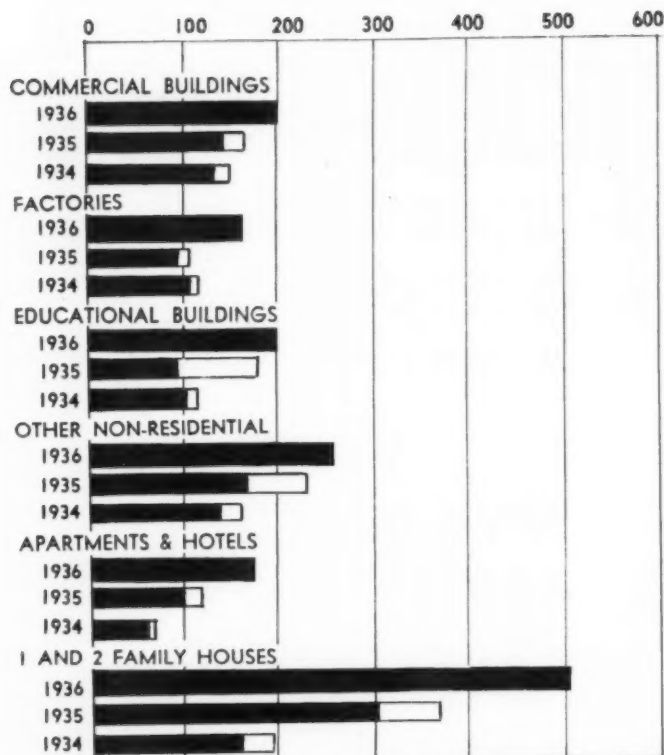
Educational building showed a marked rise in the first ten months of 1936. With a total of \$200 million this class of building—almost entirely public—scored a gain of about 133 per cent over the comparative 1935 volume.

Other nonresidential building types—hospitals, institutions, city halls, capitols, fire and police stations, prisons, military and naval buildings, post offices, religious and memorial structures and social facilities—accounted for an additional \$250 million during the first ten months of 1936, for a gain of about 50 per cent over the figures for the comparable period of last year.

Apartment and hotel building operations in the 1936 ten-month period amounted to \$168 million for a gain of about 80 per cent over the total covering the first ten months of 1935. In this improvement public housing undertakings played a part but the bulk of the gain was due to private building.

For 1- and 2-family houses a total of \$500 million has been undertaken during the first 10 months of 1936, making a gain of about 67 per cent over the volume during the comparative 1935 period. By far the larger proportion of this class of work was undertaken privately.

Substantial increases in all classes of building loom for 1937. At this writing these will likely occur more in the classes of work usually considered as private than in public undertakings. The net result will probably be a larger building total than has been seen since 1930.



BUILDING CONTRACTS IN 37 EASTERN STATES

Bars represent contract totals for each of the designated years. Figures on scale denote millions of dollars. Black portions of bars cover totals for the first ten months only.

*Heavy engineering projects not here considered.

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*I save time and trouble
on every job when I specify
J & L PIPE*



"I've learned from experience as an architect that when I specify J & L Steel Pipe I can forget about that part of the job from then on. I know that the pipe will be of uniform high quality, that it will give

dependable trouble-free service, and that the piping installation, whether large or small, simple or complex, will be one that I will be proud of."

"I know, too, that when I specify 'Jones & Laughlin,' the pipe work will always be up to schedule and that as a result other contractors can go

ahead without costly delays. That means that the whole job goes faster, saving time, money and trouble for everyone."

Specify J & L Steel Pipe on your next job. You will save yourself time and trouble and at the same time give the building owner an installation that will serve him with complete satisfaction for many years.

**J & L
STEEL**

OTHER J & L CONSTRUCTION PRODUCTS: Seamless and Welded Steel Pipe... Bars, Shapes and Plates... Structural Shapes, including Junior Beams and Lightweight Channels... Steel Piling... Concrete Reinforcing Bars... Nails and Tie Wire... Fabricated Structural Work

JONES & LAUGHLIN STEEL CORPORATION

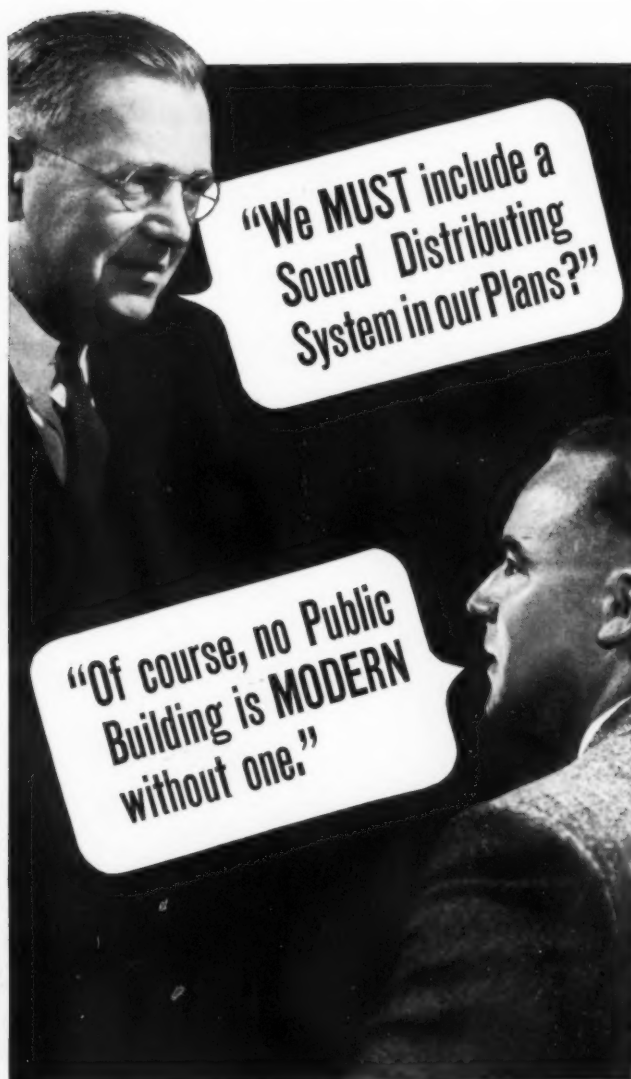
AMERICAN IRON AND STEEL WORKS
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Sales Offices: Atlanta Boston Buffalo Chicago Cincinnati Cleveland Dallas Denver Detroit Erie Houston Los Angeles
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* Operated by National Bridge Works Division of Jones & Laughlin Steel Service, Inc.

Canadian Representation: JONES & LAUGHLIN STEEL PRODUCTS COMPANY Pittsburgh, Pa., U. S. A., and Toronto, Ont., Canada



Write for the new J & L Pipe Handbook SP-3, containing Application Data for Engineers and Contractors, or refer to Sweet's Catalog for information on J & L Pipe.



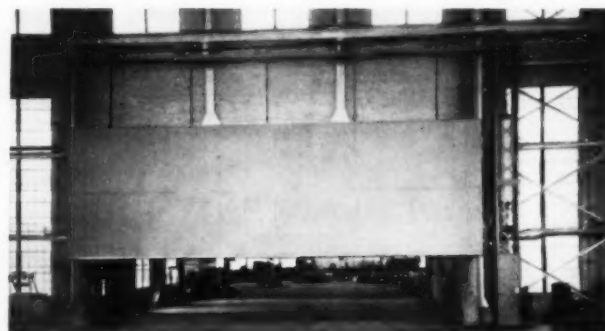
When you next plan a school, hospital, hotel or auditorium, ask a Graybar engineer to tell you about Western Electric's new Sound Distributing System. You will find that it fits into your plans perfectly—that it will help to make your building more modern and useful.

Graybar has every facility for helping you plan installations to meet your specific needs. And the quality of Western Electric apparatus is assured by that Company's record in making Bell Telephones and other Sound Transmission equipment.

For booklet and full details, write Graybar Electric Company, Graybar Bldg., New York, N. Y.

Western Electric
PROGRAM SOUND SYSTEMS
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MARKETING NEWS



60-foot emergency door

A self-closing vertical lift fire door in which the operating speed is under control at all times and which can be instantly reset after an emergency closing, has been developed by Cornell Iron Works, of Long Island City, N. Y. The door shown in the illustration was designed for the U. S. Navy for an airplane factory, but it is suitable for hangars, motion picture studios, car-building shops or any location where large self-closing doors are used. It has been built to a size of 60' x 20' and can be manufactured to practically any dimensions.

The door section may be of tin-clad wood, structural steel covered with asbestos, or any standard fireproof construction. It has very wide lap at lintel and jambs and has tight-closing steel fire-stops. In operation the door, partially balanced by a counterweight, slides vertically between guides so designed that no amount of expansion due to heat can cause sticking. The operator consists of one or more oil cylinders with piston rods connected to the door or counterweight and supplied with oil by a motor-driven pump. The system is closed and under pressure so that the door cannot close until the valves are properly operated. For emergency closing, the melting of a fusible link opens a release valve permitting the door to close but holding its closing speed to any desired rate. Resetting this valve restores the door to normal operation. A hand pump is provided for use in case of power failure.

In the Navy Department installation, a door weighing over 10 tons operated in one minute normally and in 45 seconds for emergency closing. The operator is provided with a cushioning device and the door closes without any shock.

controlled heat in the kitchen

The modern housekeeper is no longer a routine drudge; instead she has become an intelligent kitchen executive through attention to scientific temperature control—that is the view taken by Anne Pierce, consultant in home economics, in her brochure, "Kitchen Temperatures," which is shortly to be issued by The Temperature Research Foundation of Kelvinator Corporation. The brochure is the latest of an educational series published by the Foundation, which serves as a clearing house for authentic information in the field of temperature engineering. Copies of "Kitchen Temperatures" may be obtained without charge by writing to Edward Heitman, Director, 420 Lexington Avenue, New York, N. Y.

OF THE BUILDING INDUSTRY

metals and plastics form united front

The permanent exhibition on the third floor of the International Building, Rockefeller Center, New York City, will hereafter be known as the Metals and Plastics Bureau. Diversification of the displays which constantly show new developments in the metals industry and the plastics industry, has resulted in a sustained demand for a name to indicate the scope of its activities. During November a special exhibition of plastics under the auspices of *Modern Plastics* was shown. It is a visible story of the progress made by chemists, designers, and fabricators. A similar visible story in the field of aviation is now open. Other exhibitions will follow.

record-breaking order for refrigerators

An order for 16,697 electric refrigerators, the largest single order of its kind ever placed and valued at well over \$1,000,000, has been awarded to the Westinghouse Electric and Manufacturing Company by Public Works Administrator Harold L. Ickes. The refrigerators are to be used in thirty-four of the PWA slum-clearance and low-rent housing projects located in twenty-six cities throughout the country where electric rates make this type of refrigerator more economical.

air conditioning anniversary

December 8 this year marks the 25th anniversary of the founding of the air conditioning industry as we know it today. On this date, in 1911, Willis H. Carrier presented his rational psychrometric formulae before the American Society of Mechanical Engineers. Although air conditioning was officially recognized as a true art and science and 1911, installations had been made and were in operation 10 years prior to this date.

gas-fired air conditioner

A warm air conditioner, gas-fired, is announced by the General Electric Company. This is a direct fired conditioner developed especially for residential winter service; cooling coils for complete summer air conditioning may be added at a later date. Fully automatic humidity control and thermostat enable the mechanism to function steadily without attention. The heating surfaces include radiation screens of sheet steel.

automatic pressure burner

Timken Silent Automatic Division of the Timken-Detroit Axle Company announces the introduction of a new and larger pressure burner to their line of oil heating equipment. The new model, which will be known as the Model GH, is designed along conventional lines. It has an oil-burning capacity of from 5.50 to 10 gallons per hour and is capable of handling approximately 3,600 square feet of equivalent direct steam radiation. The burner is finished in black or green.

unit heaters in color

The Ilg Electric Ventilating Co. has now made its unit heater available in a series of special color finishes. These

This New Storm Sash Gives You Ventilation Without Direct Drafts



The Ordinary Storm Sash permits the wind to blow direct onto a bed

● When opened for fresh-air ventilation, the tilt-in sill ventilator of the new Fenestra Inside Storm Sash serves as a built-in windguard. In a bedroom, it deflects the breezes upward, protecting sleeping occupants from direct drafts... When closed, the Fenestra Storm Sash provides a highly efficient dead-air space between it and the outer Casement Window, reducing heat loss, and saving fuel. For details, write DETROIT STEEL PRODUCTS CO., 2259 East Grand Boulevard, Detroit, Michigan.

Fenestra

MARKETING NEWS OF THE BUILDING INDUSTRY

colors include Spanish ivory, heather brown, silver, Pacific blue, etc., and are intended for use in offices, stores, restaurants where the furnishings of the room require color harmony.

new unit heater designs

Airtherm Manufacturing Company, 1474 South Vandeventer, St. Louis, announces a completely redesigned line of unit heaters to be sold under the name Airvector. Exclusive features are a new method of motor mounting, said to eliminate swinging or "pendulum action" of the unit, caused by motor vibration; the forming of two vertical ribs around the cabinet which increases strength of the assembly and deadens all vibration of the cabinet panels; welded construction wherever practicable; and the elimination of all except absolutely functional lines.

electric range

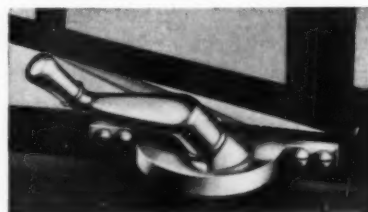
A new low-priced electric range—the "Comet"—has been announced by the Appliance and Merchandise Department of General Electric Company. It embodies numerous new ideas in design and construction.

airtight windows

A new line of casement and double-hung windows has been introduced by General Bronze Corporation, 34-19

Tenth Street, Long Island City, N. Y. The windows are made of aluminum and bronze. They are easily operated, and are said to be proof against rust, dust and rattle.

casement window operator



H. S. Getty & Co., Inc., 3348 N. 10 Street, Philadelphia, manufacturers of hardware for metal and wood casement windows, has developed an internal gear operator.

While it may be used as an adjuster for nonscreened windows, it is especially adaptable for screened casements. It eliminates the necessity of using hinged screens and stay-bar adjusters and avoids the expense of additional hardware. The housing of the operator, which is attached to the inside of the sash, contains a worm driven by a crank handle; this worm meshes with a gear, integral with the operating arm that extends through the sash and runs freely in a channel guide attached to the inside of the casement window sash. The device provides a positive lock when the window is closed and holds the window rigid when open at any angle. It is furnished in various metals and finishes.



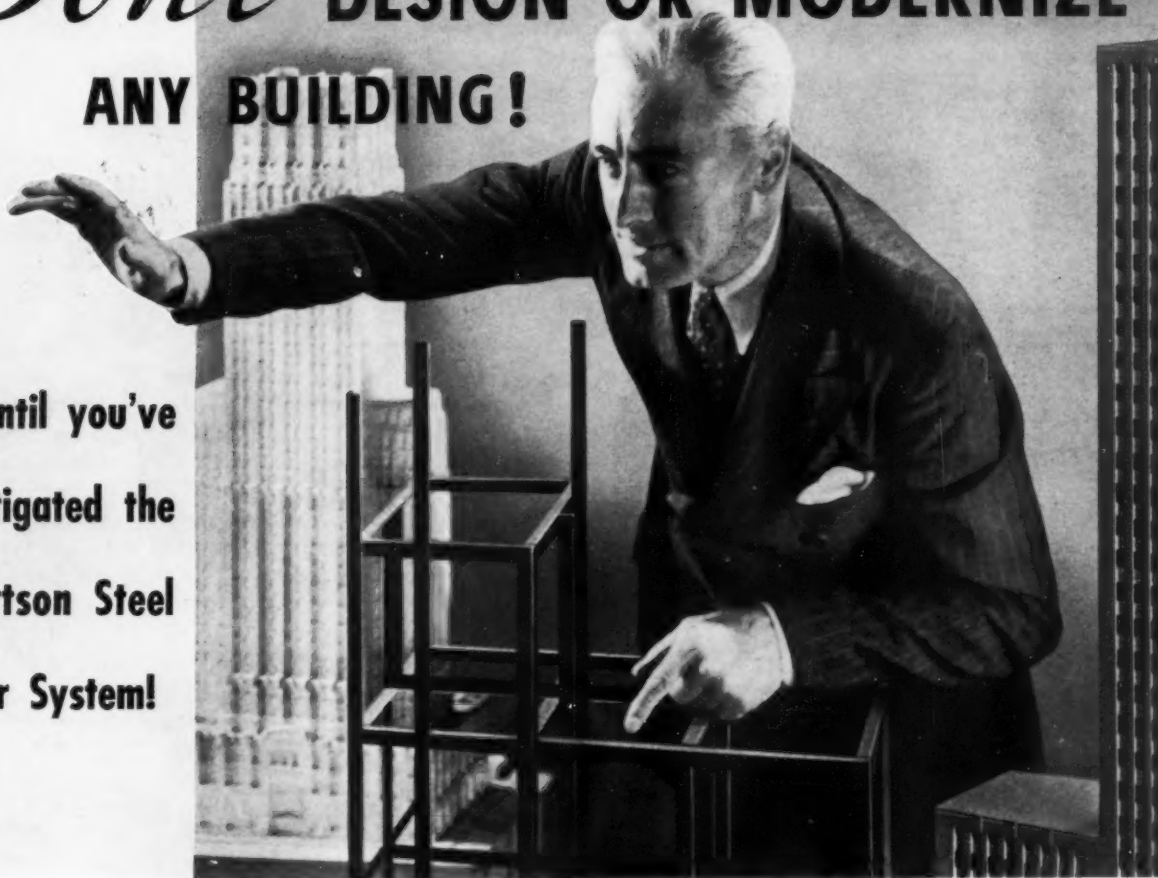
when the finished drawing is done with Higgins India Drawing Ink. Higgins is black, easy flowing, the *ink* of inks for all architectural work. And how a drawing, done with Higgins, does reproduce!

CHAS. M. HIGGINS & CO., INC. • 271 NINTH STREET, BROOKLYN, N. Y.

HIGGINS

Don't DESIGN OR MODERNIZE ANY BUILDING!

... until you've
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Robertson Steel
Floor System!



Send Coupon for Free Booklet

BEFORE drawing up plans for any building or modernization project, find out how the Robertson Steel Floor System can give your client a better job, and yet effect both original and ultimate economies for him.

The use of the Robertson System saves time in construction, for example. Buildings go up 20% to 30% faster ... because Robertson Flooring eliminates temporary planking, floor forms, delays of concrete con-

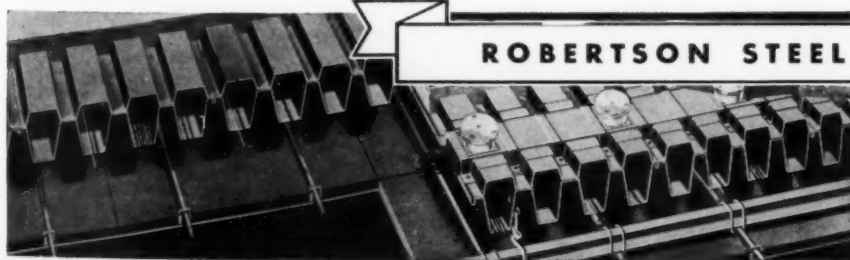
struction. Other trades can work on the floor, can stack materials on it, immediately after it is laid.

This faster construction means money saved. Your client gets quicker occupancy in a new building. More weeks of revenue or usage. Faster modernization ... often without even interrupting regular operations.

The Robertson Floor combines greater strength with less weight, reduces dead weight loss. Consequently, it reduces structural steel

costs. And of supreme importance, the Robertson Floor System provides a comprehensive wire distributing system ... for each hollow steel cell in the floor is a protected wireway. The resulting electrical availability of the floor affords adequate facilities for every present or future electrical need. And that means longer profitable building life ... retarding of electrical obsolescence.

Regardless of the type of building you are interested in ... don't fail to send the coupon below for facts and data about the Robertson Steel Floor System. Do it now!



ROBERTSON STEEL FLOOR SYSTEM

H. H. Robertson Company,
2005 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your booklet on the Robertson Steel Floor System entitled "New Life for Buildings."

Name

Address

City State

MARKETING NEWS OF THE BUILDING INDUSTRY

reversible link mats

A new line of link mats has been introduced by The B. F. Goodrich Company, Akron, Ohio. The links, which are of increased size in length and thickness, are made of a quality rubber specially compounded to resist age and abrasion. Each link is supplied with four sharp corrugations or ridges on either side to give maximum scraping action. All mats are reversible; the use of slip-joint nosing insures an absolutely flat surface regardless of which side is turned up. The mats are available in a range of eleven colors.

electrode for welding

Steels known as 4-6% Chromium Steels can now be welded by means of a new electrode just announced by The Lincoln Electric Company, Cleveland, Ohio. These steels possess a resistance to sulphide corrosion four to ten times that of ordinary steel and a resistance to oxidation at 1,000° F., three times as great.

time switches

Two new synchronous motor time switch models are offered by the R. W. Cramer Company, 67 Irving Place, New York. Both switches have 4-ampere or 30-ampere capacity for 110- or 220-volt circuits. Both will control

almost any type of alternating current circuit operated on a predetermined time basis.

period lighting

A new lighting fixture designed for "provincial," "Colonial farmhouse" or "English" interiors has been put on the market by Lightolier Company, Jersey City, N.J. The shades are made of heavy gauge metal. The fixture is 19" in width, 42" in length.

direct duplication

The Standard Mailing Machine Company, Everett, Mass., is marketing a new process duplicator which duplicates direct from the original drawing or typewritten sheet. There is no gelatin, no stencil, no type. The original is made on a sheet of paper by using hectograph carbon paper in a reversed position. Thus, a positive copy is made on the front of the sheet and the carbon produces a negative on the back of the same sheet. This negative is used as the original. The original is readily clamped to the drum of the machine, and the operator can start immediately to feed the copy sheets. Any size form, from the smallest label up to legal sheets, can be handled easily and rapidly, without possibility of error.



The Chrysler Showroom, 42nd St. and Lexington Ave., New York
Architects, Reinhard & Hoffmeister Contractors, Barr, Irons & Lane, Inc.

GENERAL BRONZE Improved revolving doors of stainless steel selected by The Chrysler Corporation for its New York showroom.

The doors pictured aid in maintaining uniform temperature, so necessary to this air-conditioned Sales Room. They cut fuel bills—by excluding cold blasts in winter and hot street air in summer.

Whether your building is old or new, look into these doors.

THE CHRYSLER CORPORATION
selects

REVOLVING DOORS

by

GENERAL
BRONZE

AUTOMATIC • COLLAPSIBLE • PANIC PROOF
in Bronze, Aluminum, Stainless Steel or Wood



GENERAL BRONZE CORPORATION

Distinctive Metal Work

LONG ISLAND CITY, N. Y.

*Ornamental Grille Work, "PERMATITE" Windows,
Trim, Doors, Entrances, Railings and Statuary.*

What telephone arrangements will you plan for the Webers

PROBLEM
No. 4



if they build this house?

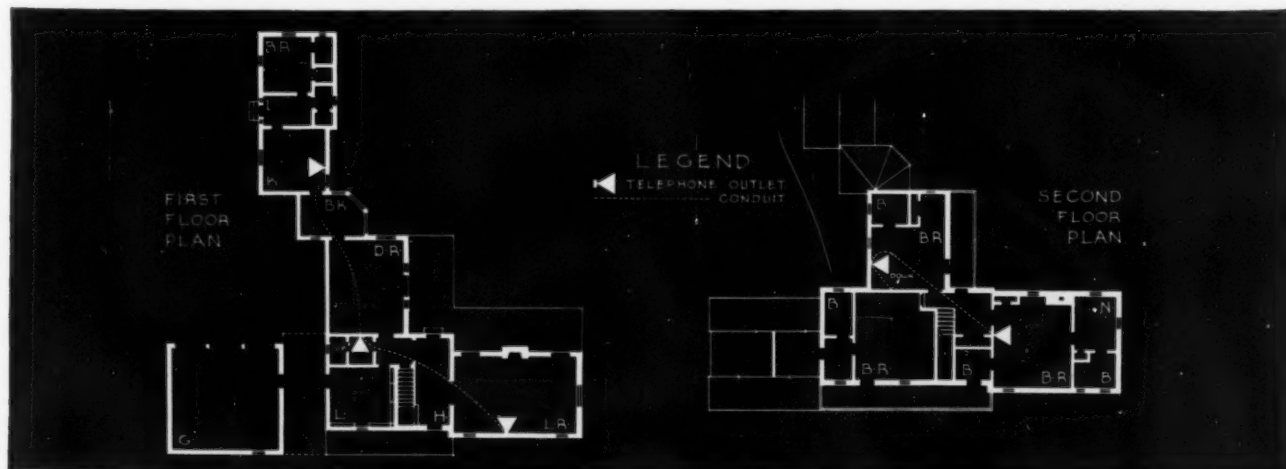
FRED WEBER is "on the way up" in the printing business. He's going to build his home now—so the whole family can enjoy it while the children are growing. The plans on this page have been tentatively approved. *What provisions will you make for telephones?*

First of all, built-in conduit or pipe to avoid exposed wiring and protect against certain types of service interruption. Also, the Webers may want to add more telephones later on. Conduit, leading to outlets at strategic points, makes further telephone installation easy . . . even with the permanent, modern building materials you specify today.

An outlet belongs in the master's bedroom. When the girls grow up they'll want a telephone for their own use, so conduit should lead to the room they'll occupy. Three outlets will be enough for the rambling first floor. One in the living-room. One in the hall closet, easily accessible from the dining-room and library. And one in the kitchen to serve the rear of the house.



This is a suggested approach to a typical problem. Our engineers will help you develop efficient, economical conduit layouts at any time. No charge. Call your local telephone office and ask for "Architects' and Builders' Service."



MARKETING NEWS OF THE BUILDING INDUSTRY

roller guide shoes for elevators

Otis Elevator Company announces that it has perfected a type of elevator guide shoe which produces an action somewhat similar to the "knee action" of an automobile. This shoe consists of rubber-tired wheels, supported by a spring action, which roll silently on the elevator guides.

lead head nail for roofing

The new "anchor" lead-headed nail, introduced by the W. H. Maze Company, Peru, Illinois, is designed not to draw out. It employs the principle of an anchor, the anchors being arranged in rings about the shank.

thatch roofing

"Old English Thatch" in the form of shingles is being marketed by the Thatched Roof Manufacturing Corp., Stamford, Conn. The shingles have an asbestos felt base, 30" wide by 12", with embedded Palmyra Reeds extending loose for an additional 15 inches.

employees' wardrobe rack

Vogel Peterson Co., Inc., Chicago, announces a utility wardrobe rack (No. 3U). These new racks require only 40% of the space necessary for lockers. Coats are hung on hardwood hangers spaced 4" on center and a separate hat

space above each hanger is provided. Rubbers and shoes are taken care of by means of a shoe rack below the coats. Umbrella racks are set in each upright frame. Racks can be set individually in convenient places in the office, factory, or store, or grouped into rooms set aside for coatroom use.

hid-in wallboard clips

The V-W Company, 471 East Broad Street, Columbus, Ohio, has developed a new means of attaching fiberboard to walls and ceilings without exposing nailheads. Clips are inserted in two opposite edges of the fiberboard pieces. A set of clips on one edge is nailed firmly to the joists. Another set of clips on the adjoining edge of another piece is designed to slip under the edge of the nailed-down piece. The clips on the opposite edge are then nailed down, and the process repeated.

prefabricated hardwood flooring

The Wood-Mosaic Co., Inc., Louisville, Ky., is marketing a new flooring under the trade name "Parkay Floors." The flooring consists of individual 4"x 2" and 2" x 2" hardwood blocks of standard 5/16" thickness, assembled in basket-weave pattern and held securely together in a semi-pliable grille. Woods available are oak and walnut, and East Indian teakwood. Sections measure 2' x 6'.



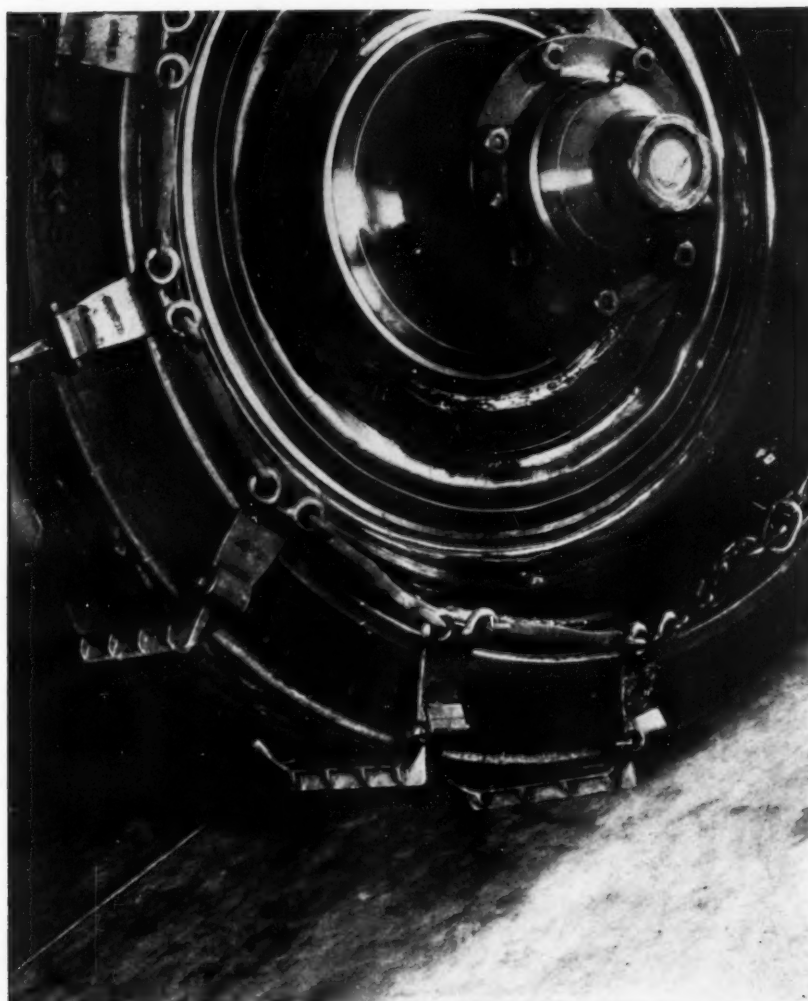
SEE WHAT DURAPLY
... THE NEW
WATERPROOF PLYWOOD
OFFERS THE ARCHITECT

DURAPLY—made possible by the ALGOMA Resin-Fused Process—is adaptable for all exterior as well as interior uses. Absolutely waterproof and stainproof—it offers a wide range of new artistic treatment . . . opens opportunities for low-cost building in pleasantly modern architectural technique. Both economical and practical from a structural standpoint. Also easy and inexpensive to apply because available in very large panels. Ask for booklet giving full details and illustrating striking Duraply application.

ALGOMA PLYWOOD & VENEER COMPANY
Plywood Mills and General Offices, 114 Wolf River Rd., Algoma, Wis.
Veneer Mills, Birchwood, Wis.

Cincinnati: 634 Eden Park Entrance (Cherry 7823)
Chicago: 1234 N. Halsted St. (Diversey 4342)
Cleveland: 5400 Brook Park Rd. (Shadyside 1400)
Detroit: 355 E. Woodbridge St. (Cadillac 2472)

Send for this useful booklet. Gives full details on DURAPLY and other Algoma Plywoods. Illustrates wide variety of applications.



'TORTURE TEST' FOR ZERO-PLACED CONCRETE

In cold weather, concrete hardens slower, has to be heat-protected until it is strong enough to withstand freezing. That is why 'Incor' 24-Hour Cement is a 'natural' for winter construction. 'Incor' hardens five times as fast as ordinary cement. That means 4 advantages: (1) concrete is safe from freezing days sooner; (2) heat-protection costs are 60 to 70 per cent lower; (3) form costs and overhead expense are reduced; (4) winter work proceeds at summer speed, with steadier work for labor. And 'Incor' makes better concrete, too. Example:

With outside temperature 17° below zero, inside 45° above, 'Incor' concrete floor was placed in Central Fire Station, Wakefield, Mass. Just 44 hours later, a heavy fire-truck rolled over the freshly-placed surface; 2-ton wheel-loads pounded chisel-sharp, steel-flanged chains (see above) against the new concrete without mar. No hardener or admixture was used or needed. In spite of low temperatures, 'Incor' cured thoroughly in less than two days; daily hose-washing shows the concrete is strong, dense, watertight.

Better concrete, in a fraction of the usual time, at lower cost—convincing reasons for changing to 'Incor'* on work now in progress. Write for free copy of new "Winter Construction" book—address Lone Star Cement Corporation, Room 2210, 342 Madison Ave., New York . . . 'Incor' and Lone Star sales offices in principal cities.

*Reg. U. S. Pat. Off.

'INCOR' 24-HOUR CEMENT



Edmond Town Hall, Newtown, Conn.
Philip Nichols Sunderland, Architect

MARBLE

ADDS AGELESS BEAUTY TO TRADITIONAL STYLE

● This Georgian town hall shows the possibilities of a combined brick and marble exterior. The traditional flavor of the style, enriched by the dignity and beauty of marble, is admirably fitted to homes as well as public and other large buildings.

Frequently the architect is unable to plan for an all-marble exterior. In such cases, a treatment like this offers an effective solution, combining lasting loveliness and small expense.

The Vermont Marble Company supplies fine marble for all architectural purposes. We are always ready to give specific information about the use of marble in any interior or exterior plan. Write direct to:

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COMPANY**

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NEWS OF THE TRADE

Carrier Corporation, Newark, New Jersey, announces the appointment of William Hull Stangle, architect and engineer, as a member of its architectural service. Mr. Stangle will cooperate with architects and owners.

Construction Industries Association, 101 Park Avenue, New York City, announces a free advisory consultation service to the building public.

"Briggs Beautyware" is now on permanent display at 101 Park Avenue, New York City.

Corning Glass Works has acquired the Macbeth-Evans Glass Company of Pittsburgh. Negotiations leading to the purchase have been completed and the action has been ratified by the Boards of Directors of the two companies. Ratification by stockholders should be completed in time to permit operation on the new basis on January 1. The two manufacturing plants of the Macbeth-Evans Glass Company, located at Charleroi, Pa., and Elwood, Ind., will be operated as divisions of the Corning Glass Works.

EBCO Manufacturing Co. (formerly D. A. Ebinger Sanitary Manufacturing Co.) announces the opening of a Chicago branch at Room 407, 30 N. LaSalle Street.

Ledkote Products Company announce that they have purchased from Hope's Windows, Inc., the dies, molds, models and machinery for the manufacture of Hope's cast lead and ornamental lead-coated copper products and lead garden ornaments. These will be sold under the name of Ledkote Products Company and fabricated at their Long Island City plant, 36-29 23rd Street.

The Buffalo Forge Company of Buffalo, N. Y., has just taken a license under all of the patents of Auditorium Conditioning Corporation. It now may sell and install Central Station Air Conditioning Systems or give permission to others to do so. In addition it may also manufacture and sell air conditioning units utilizing the patented features.

Frick Company of Waynesboro, Pennsylvania, has signed a license agreement with Auditorium Conditioning Corporation. It has the same privileges as all other licensees and may install air conditioning systems of the central station type utilizing the Auditorium Patents or give permission to others to do so.

NEW ADDRESSES

The business address of Edmund I. Leeds, architect, has been changed from 263 Harrison Avenue to 5 Park Square, Boston, Mass.

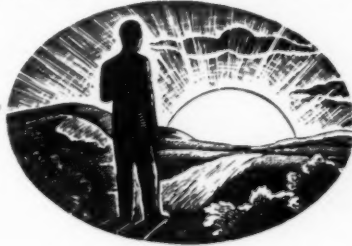
The firm of Baskervill & Son, architects, announces that F. Milton Carey and Henry T. Huband have been admitted to partnership. The name of the firm remains unchanged, with offices in the Central National Bank Building, Richmond, Va.

Francis W. Mahoney and Associates, engineers, formerly with Densmore, LeClear & Robbins, have opened an office at 177 State Street, Boston, Mass. They will handle heating, plumbing, electrical, structural and power plant engineering work.

The Division of Schoolhouse Planning, State Department of Education, Sacramento, Calif., desires technical information pertaining to school construction.

A brief glance backward ...a longer look ahead

*Air Conditioning has progressed this year, but
Delco-Frigidaire sees vastly greater acceptance in 1937*



WE HAVE reached what is still thought of by many as "the end of the air conditioning season" (a few words about this later). During this year air conditioning has attained a favor with the public which has given it great impetus. However, there still exists a considerable confusion in the minds of laymen as to what air conditioning is, what it can accomplish and what it costs.

In our first advertisement addressed to architects this year, we stated certain basic facts about air conditioning in terms which your clients would readily understand. We pointed out that air conditioning, from its most important aspect, is fundamentally cooling and dehumidifying of air, and that the accepted method of accomplishing these fundamentals is by electric refrigeration. On every occasion that we have addressed advertising to architects we have repeated this. We have done this because we believe that truth bears repetition.

*Our theme is set, but
our minds are not*

During this year we have been thinking and working at air conditioning problems with more vigor than ever before. We have developed new equipment and

improved that which we already made. We approach the new year ready to offer systems which will meet every demand that may be created by any requirement of any of your clients. All are based on a mastery of basic principles.

We believe that our discoveries and our complete line will be of genuine service. It is a certainty that property owners are becoming impatient with vague claims, and with products of doubtful sponsorship. More and more the public will look to known sources for air conditioning. Accepted ability in engineering and manufacturing will be held in growing respect. This is, of course, favorable to Delco-Frigidaire, with its General Motors background and resources. It tends to simplify the task of the architect in specifying systems which are dependable in operation and reasonable in cost.

A year 'round problem

All things considered we believe that Delco-Frigidaire can look forward to a full and busy year during which architects will find the suggestions of our

engineering and research men increasingly valuable. We say "a full year." For 1936, we believe, is the last year during which air conditioning will be thought of as a purely seasonal thing. The proper control of the condition of the air within any given space is just as important in January as in July. Air conditioning, as Delco-Frigidaire conceives it, is a year 'round operation. Its problems and methods may vary with the seasons; its function is always the same.

It is our sincere hope that in the immediate future our relations with architects may be closer than ever. It is our equally sincere resolve that we shall make those relations of greater value to architects with each succeeding month.

2 ACCEPTED FACTS ABOUT AIR CONDITIONING THAT POINT TO ONE CONCLUSION

1 Summer air conditioning is basically cooling and dehumidifying.

2 The accepted method of accomplishing this is by electric refrigeration.

CONCLUSION—Buy air conditioning from Delco-Frigidaire—the organization representing the most experience in electric refrigeration.

DELCO-FRIGIDAIRE CONDITIONING DIVISION

GENERAL MOTORS SALES CORPORATION

AUTOMATIC HEATING

DAYTON, OHIO

AIR CONDITIONING

NEW BOOKLETS AND BULLETINS

In writing to manufacturers for any of the new catalogs or booklets listed in this column, mention of **The Architectural Record** will be greatly appreciated.

MATERIALS AND METHODS

Shelter Through the Ages, by Herbert Abraham. The Ruberoid Co., 500 Fifth Avenue, New York.*

Deflection Charts . . . Douglas Fir Plywood, The Engineered Wood Product. Douglas Fir Plywood Association, Tacoma Building, Tacoma, Washington.*

Supplement to A Visual Report of Progress . . . Zinc Metals and Alloys. The New Jersey Zinc Company, 160 Front Street, New York.

Kenmar Copper Shingles. The New Haven Copper Company, Seymour, Conn.*

The Story of C-X Texbord. The Celotex Corporation, 919 No. Michigan Avenue, Chicago, Ill.*

J-M Transite Flue Pipe. . . Things You Should Know About Your Roof . . . Comfort That Pays for Itself. Johns-Manville Corp., 22 East 40 Street, New York.*

Invisible Glass, Catalog No. 16. Invisible Glass Company of America, Inc., 250 Park Avenue, New York.

Standard Patterns of Worked Redwood Lumber, Publication 509-R . . . Standard Specifications for Grades of California Redwood Lumber . . . Structural Redwood. California Redwood Association, 405 Montgomery Street, San Francisco, Calif. **The Mahogany Book, Second Edition.** Mahogany Association, Inc., 75 E. Wacker Drive, Chicago, Ill.*

Painting for Light and Decoration. National Chemical & Mfg. Co., Inc., 3617 So. Wall Street, Chicago, Ill.

HEATING, VENTILATING, AIR CONDITIONING

46 Years Experience. Carrier Corporation, 850 Frelinghuysen Avenue, Newark, N. J.* **The National Summer Air Conditioner, Model 250.** National Air Conditioning Incorporated, Division of National Radiator Corporation, Jamestown, Pa.

Reynolds Air Conduit in Theory and Practice . . . Featuring Reynolds Air Conditioning. Air Conditioning Division, Reynolds Corporation, 19 Rector Street, New York.*

LIGHTING AND WIRING

Floodlights. Crouse-Hinds Company, Syracuse, N. Y.

Taco Master Antenna System Manual. Technical Appliance Corporation, 17 East 16 Street, New York.

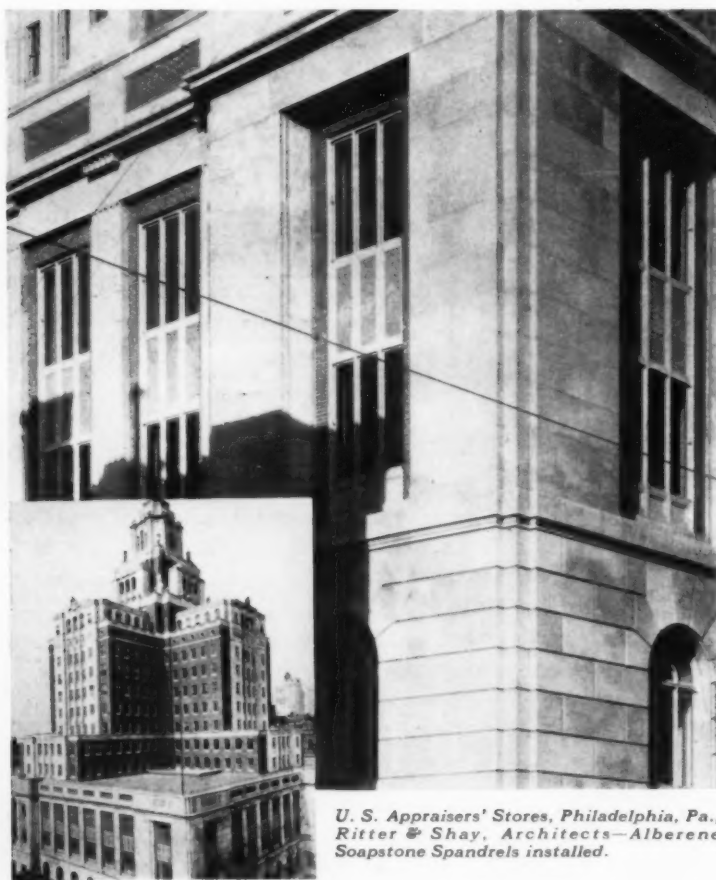
Indirect Lighting in Business, Industry. Silveray Lighting, Inc., Long Island City, N. Y. **Type "C" Switches . . . Improved Duplex Receptacle.** The Bryant Electric Co., Bridgeport, Conn.*

METALS AND GAUGES

Here's the Answer to Your Temperature Problems . . . Thermometer and Pressure Gauge Catalog No. 6703. The Brown Instrument Company, Wayne & Roberts Aves., Philadelphia, Pa.*

Polyphase Detachable Meter Catalog. Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.*

*See other information in Sweet's Catalog File.



U. S. Appraisers' Stores, Philadelphia, Pa., Ritter & Shay, Architects—Alberene Soapstone Spandrels installed.

Economical, weatherproof Spandrels provide pleasing color harmony

Alberene Soapstone Spandrels, with sand-blasted design, were used on U. S. Appraisers' Stores, Philadelphia, Pa., by Ritter & Shay, Architects.

The original Soapstone trim on the exterior of Independence Hall, Philadelphia, has successfully withstood the attacks of the elements for 200 years, so it is safe to assume that Alberene Spandrels will be free for all time of maintenance costs.

The perpetual beauty of the Spandrels is assured. As years pass, Alberene Soapstone weathers to pleasing tones of darker blue and green with glints of yellow.

The Alberene Quarries and Mills at Schuyler, Virginia, are the largest in the world devoted exclusively to the production and fabrication of special purpose stone.

We will be glad to send you a set of samples, conveniently boxed, showing the range of stone from the Alberene Quarries, and to answer inquiries promptly.

ALBERENE STONE CORPORATION OF VIRGINIA
419 Fourth Avenue, New York
Quarries and Mills at Schuyler, Virginia
Sales Offices in Principal Cities

ALBERENE

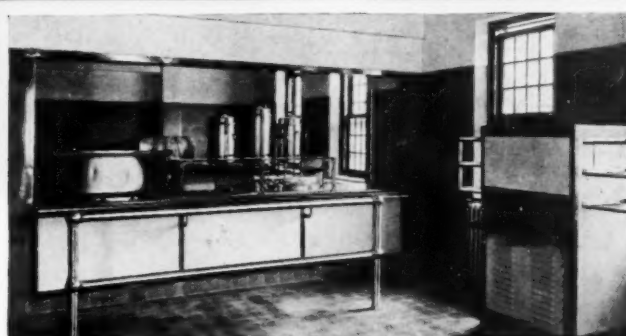
SOAPSTONE



Stainless Steel for **KITCHENS** and **CAFETERIAS**

Stainless steel assures clean, pure
food and easy maintenance.

IN applications such as these, stainless steel combines utility with good appearance...Stainless steel insures utmost purity and cleanliness because its bright surface does not rust, tarnish, or stain—will not contaminate food in contact with it. Stainless steel minimizes maintenance too, because it can be washed easily—needs no polishing or protective coating . . . Specify stainless steel wherever corrosion resistance and good appearance are desired. It will please your clients.



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Electromet
Ferro-Alloys & Metals

30 EAST 42nd ST., NEW YORK, N. Y.

Higher Levels of Illumination in this Modern, Efficient Way



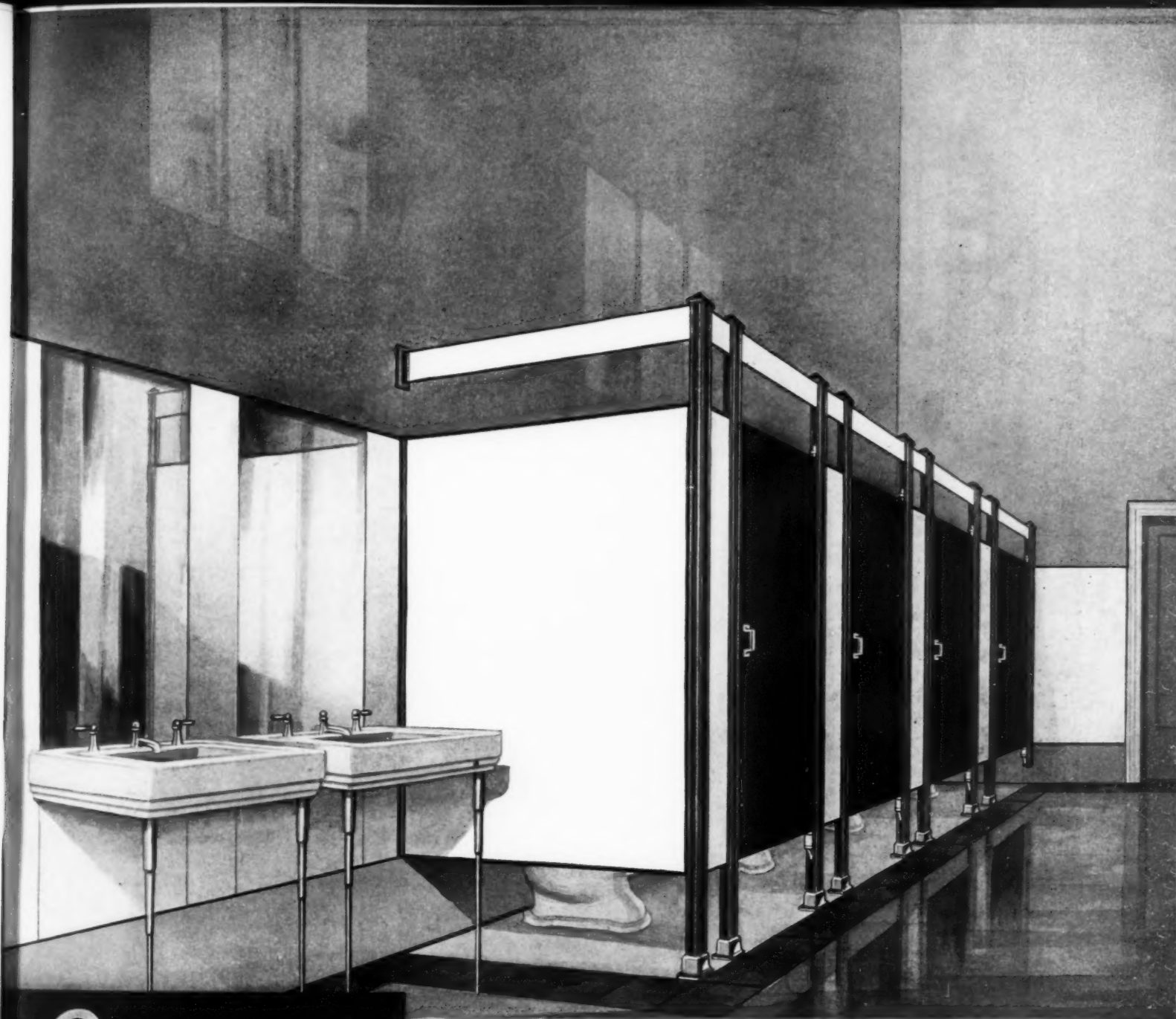
Under General Electric Mercury Lamps every part of this shop receives illumination that makes possible uniform, economical production

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General Electric Mercury Lamps make it possible for industry to obtain higher levels of illumination at a lower cost per foot candle than ever before. The result is more economical production, and a marked stepping-up in efficiency. No longer need workmen complain of eye-strain toward the end of their shift. These mercury lamps give the necessary higher levels of illumination that decrease the "effort" of seeing. More uniform work at lower cost can be produced.

General Electric Mercury Lamps are furnished in two sizes—400-watts and 250-watts. The 400-watt size is designed to burn vertically; the smaller size is adapted to universal burning. Both combine well with incandescent light. Both are adapted for use on 115- or 230-volt lines and both have a rated life of 2,000 hours. Their efficiency is from 50 to 100% higher than that of other light sources. For complete details address:

GENERAL  ELECTRIC
General Electric Vapor Lamp Co. 759H Incandescent Lamp Department
807 Adams Street, Hoboken, N. J. Nela Park, Cleveland, Ohio



Porcena
PORCELAIN ENAMEL

TOILET PARTITIONS

The first to originate and offer a definite style of toilet partition and wainscot panel utilizing porcelain enamelled panels, Sanymetal presents a wider scope for the creative talents of a patient profession and protects the building industry in the use of such materials by years of accumulated engineering and craftsmanship experience in the manufacture of certain exterior parts of porcelain enamelled metal.



Sanymetal
TOILET AND OFFICE
PARTITIONS

***Invitingly Clean and Cheerful as Every
Toilet Room Should Be . . .***

***Sanymetal* PORCENA TOILET PARTITIONS
HELP CREATE SUCH IMPROVED ENVIRONMENTS**

Widely varying classes of people, many of them unappreciative of modern facilities, use and abuse the toilet rooms of public and semi-public buildings. Sanymetal's study of this situation suggests improved environments.

Encourage the impulse to respect and protect property, promote orderliness, cleanliness and a deep appreciation for toilet room facilities by installation of Porcena Toilet Partitions. The effect of their glimmering brightness on toilet rooms is strikingly apparent. Such an installation combines the practical with the unusual to create a harmonious environment quite in keeping with trends in architectural practice.

Porcena Toilet Partitions present exclusive features obtained by Sanymetal's engineers without sacrificing simplicity of design or one iota of sound mechanical construction and sturdy strength. Their adaptability and durability commends Porcena Toilet Partitions for any type of installation.

Longstanding restrictions, now removed by Porcena Toilet Partitions, no longer limit creative effort in toilet room design. A Sanymetal representative in your locality awaits the occasion to assist you. Write for brochure.

THE SANYMETAL PRODUCTS CO., INC. • 1705 Urbana Road, Cleveland, O.

ARCHITECTURALLY SPEAKING

by

OTIS ELEVATOR COMPANY

RECENTLY, we used this *Architecturally Speaking* page to announce the rounding out of what we consider the most modern phase of elevator development—a complete line of elevators whose control mechanism is operated by buttons—Finger-Tip Control. May we now direct your attention to an important feature in this announcement, namely, the adaptation of Signal Control (master of the Finger-Tip line) to moderate-speed machines.



You are already familiar with the use of Signal Control in the higher buildings. By adapting Signal Control to geared, moderate-speed car-switch machines, we have made it possible for the moderate-sized building to give big-building elevator convenience. Which puts the older building on a far more favorable basis with the new and towering giant.



Heretofore, these slow-speed elevators could not be modernized without the costly scrapping of a

large part of the machinery. It is now not only possible, but practical, to change over the geared machines themselves. Takes only moderate additions to present equipment to make them Signal Control-operated.



Furthermore, automatic Signal Control is not only available for passenger elevators of the geared type, but for slow-speed freight elevators as well.



All of which opens new and unlimited modernization opportunities for these older buildings. No longer need the smaller building suffer in *quantity* or *quality* of transportation as compared with its big neighbor. For elevator modernization to Finger-Tip Control will make space in one just as desirable as in the other.



If you are interested in more complete details, we suggest that you request full information from the Otis office in your city.

THIS NEW CELOTEX PRODUCT... **VAPORSEAL** **INSULATING SHEATHING**

***Solves the Problem of Moisture Penetration
and Condensation***

● You'll want to specify it for these important reasons:

1. It gives triple protection against moisture and deterioration!
2. Original Celotex insulating value is maintained because the seal is on the surface!
3. Stronger and stiffer—provides far greater bracing strength!
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6. Protected against termites and dry rot by the patented Ferox Process!
7. It is backed by the Celotex Written Guarantee! *

* The Celotex Written Life-of-Building Guarantee, when issued, applies only within the boundaries of Continental United States.



NOW Celotex provides entirely new protection against the destructive effects of moisture—with Vaporseal Insulating Sheathing! This newly developed sheathing has a core of stand-

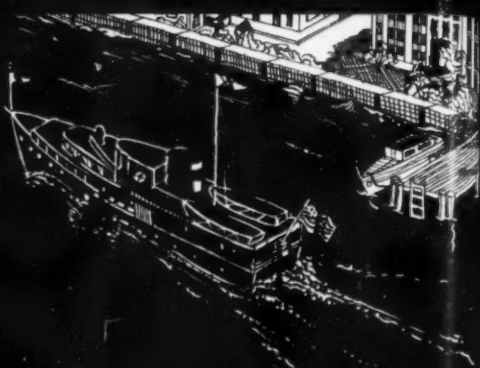
ard Celotex, moistureproofed during manufacture, and then additionally sealed on the surface against vapor and water. Let us send you a sample and full particulars without obligation.

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CELOTEX CORPORATION AR 12-56
919 N. Michigan Ave., Chicago, Ill.
Without obligation to me, please send sample and full information about Celotex Vaporseal Insulating Sheathing.

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Address
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GUILD

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PRICED FOR THE SMALL HOUSE, TOO!**

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THE new double-hung Aluminum windows offered by leading manufacturers give new scope to fenestration ★ All the intrinsic advantages of the double-hung principle ★ All the permanence of dimension inherent in metal construction ★ All the advantages of Aluminum: Lightness for easy operation; resistance to weather, which assures continued beauty with minimum maintenance and without painting or repainting; no rusting, shrinking, warping, or swelling; small, strong sections and precise profiles made possible by the use of extruded shapes of Alcoa Aluminum ★ All this at a price which is extraordinarily low ★ Aluminum windows should go into your next small house specifications ★ Will you, or shall we, ask the manufacturers to send you the details? ★ Aluminum Company of America, 2167 Gulf Building, Pittsburgh, Pennsylvania.



REG. U. S.
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ALCOA

• ALUMINUM

SAVE Square Feet



20 old-type units here were displaced by Monel Metal. Note the valuable space thus saved.



and Round Dollars

There's an easy way to trim costs in institutional laundries...plan for

MONEL METAL



10 modern units saved 25% in floor space, cut operating costs 42.8%.

On any institutional job when the budget won't stretch, here's one place you can cut costs... and assure a positive gain in year after year operating efficiency:

There's no theory about the saving that Monel Metal laundry equipment assures. The installation shown here takes up 25% less floor space than the older equipment. The saving in operating costs, year after year, amounts to 42.8%.



Moreover, the Monel Metal-equipped laundry

uses 10 machinery units, against the 20 old-type machines that were displaced, and needs 4 operatives instead of 7—to turn out the same amount of work.

There's no guesswork about this... it's actual history.

Moreover, Monel Metal is smooth; solid, rust-proof, resistant to corrosion, and so tough and strong that wear and depreciation almost reach the vanishing point.

Monel Metal is available in washing machines, extractors, trucks, table tops, utensils, starch cookers and every part

and piece of laundry equipment which is subject to rust, corrosion or wear.

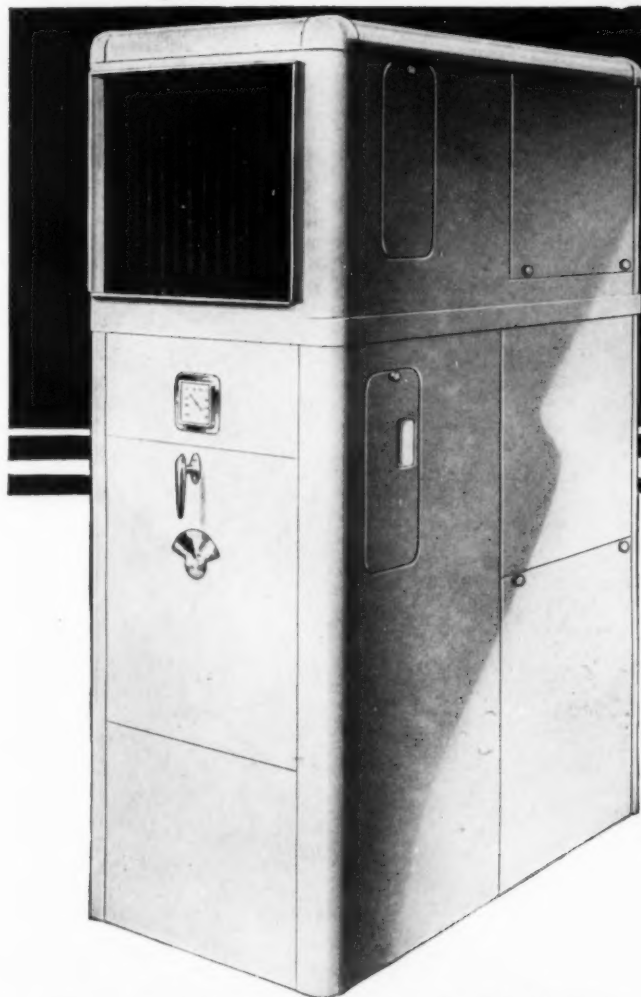
Write for information regarding the planning and equipment of institutional laundries, and facts about Monel Metal laundry equipment. Address:

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67 WALL STREET NEW YORK, N. Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

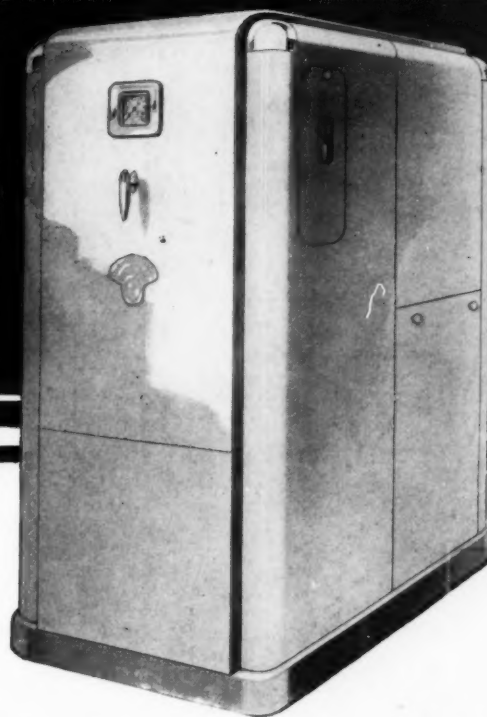


*Specify these
outstandingly modern units*



The FITZGIBBONS BOILER-AIR CONDITIONER

This is the unit which some say is doing more than any other single influence to get people thinking about air conditioning. In a floor space no larger than the usual heating boiler requires, it gives complete winter AIR CONDITIONING, economical STEEL BOILER HEAT, and year-'round HOT WATER SUPPLY with no tank or other accessory needed. Beautiful enough for any basement—and operates with any oil burner, gas burner or coal stoker.



The FITZGIBBONS OIL-EIGHTY AUTOMATIC

The steel boiler that has given a new meaning to Automatic Heat, and a new beauty to many basements. The streamlined, steel jacketed unit that gives DOMESTIC HOT WATER summer and winter, with no storage tank or other visible accessories, while providing a protected space behind easily removable panels, in which practically any burner will be at home and do its work to the best advantage.

Built in 12 sizes, some one of which is certain to be just right for any proposition you may have. A unit which is modern in appearance and in performance.

Here is a line-up of deep interest to you and to your clients. And to help you present the facts in compelling fashion, we are ready with powerful sales ammunition, such as the new catalogs recently published, profusely illustrated and convincingly written from the home-owner's viewpoint—as outstanding in their way as the units which they describe. These catalogs should have their place in your brief-case, and be instantly available in your office. Write us for copies.

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General Offices:

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Works: OSWEGO, N. Y.

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Library of the George Oppen residence, San Francisco, looking toward the garden through a curved window area glazed with L·O·F Polished Plate Glass. Gardner Daily, Architect.



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Quality Glass

Libbey·Owens·Ford Glass Company, Toledo, Ohio manufactures a complete line of flat glass, including Flat Drawn Window Glass . . . Polished Plate Glass, both clear and in colors . . . Heavy Sheet Glass . . . Greenhouse Glass . . . Safety Glass . . . Tuf-Flex Tempered Plate Glass . . . Vitrolite Opaque Structural Glass . . . Aklo Heat-Absorbing Glass . . . and distributes the Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee.

For the *NEW* Architectural Trend

USE THIS NEW RESOURCE

THE REVERE REVECON System is a tremendous aid to architects in expressing the new functional architecture desired today—a means of making savings in construction—a product and a system that fits into nine out of ten interior or exterior modernization jobs right now!

REVECON structural sections solve completely one of the most vexing problems of the architect—a better method of constructing surfaces using standard flat sheet materials. REVECON construction enables the job to be done easier, faster, more economically. It provides for ready replacement or rearrangement of panels. It gives full protection against distortion by expansion or contraction.

How this is done cannot be told properly in an advertisement. It is better shown in the data sheets here reproduced. Sixteen of these sheets, with specifications, are now ready for distribution to responsible architects and contractors. Ask for the new Revere "REVECON HANDBOOK." Write us on your own letterhead for your copy.

REVERE REVECON SYSTEM of standard extruded structural sections for holding decorative flat sheet materials.

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Unusual and distinctive use of Atlas White terrazzo in the residence of Mrs. Edwin Ruud, Hillcrest Road, Pittsburgh. Maximilian Nirdlinger, Architect; Patrizio Art Mosaic Co., Terrazzo Contractor, both of Pittsburgh

TERRAZZO GIVES YOUR IDEAS FREE REIN

ONE of the things that makes fine terrazzo so highly satisfactory to work with is this:

You can carry out your creative ideas—both as to color and design—exactly as you plan them.

You are not limited in any way. You can select from a wide variety of marble chips of many colors and shades. You can select from a number of color pigments for matrix tints. With these, and with Atlas White portland cement (plain and waterproofed) as a base, you can create exactly the effect you desire—in color combinations, pattern and texture variations.

Richly beautiful textures for homes and churches—strong colors and striking patterns for stores and public buildings—

brilliant contrasts for theater lobbies . . . whatever the application, you are sure to get a faithful execution of your design with Atlas White terrazzo.

Consider this fine terrazzo in planning new buildings or modernization. It is economical, durable, inexpensive to maintain. And remember—the use of *white* portland cement is essential to bring out the full rich beauty of fine terrazzo.

Your terrazzo contractor will gladly give you full information on fine terrazzo made with Atlas White, and show you samples of colors and textures. Or write us direct. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), 208 South La Salle Street, Chicago.

SPECIFY ATLAS WHITE PORTLAND CEMENT FOR ALL FINE TERRAZZO



T-3

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

Briggs Beautyware

in keeping with the TEMPO of Modern architecture



● The "Made in Detroit" Home, built and equipped with materials made in Detroit and sponsored by the Detroit Board of Commerce. Hugh T. Keyes, architect, Detroit. Owners, Mr. and Mrs. Lloyd H. Buhs. An outstanding example of modern architecture, equipped throughout with Beautyware plumbing fixtures.

RECENT national surveys show that the preference for modern architecture by new home owners has gone from 4th to 3d place during the past year. More and more homes are being built for living—from the inside out. And Briggs Beautyware plumbing fixtures keep step with this swing to functional design in modern living.

Every detail of Briggs Beautyware aids the architect in his present-day problems of using space to the best advantage—of using a wider range of materials for design, style and decorative effect.

Precision in manufacture permits greater accuracy in installation of units. Due to its design, a 5-foot Beautyware tub has as much bathing area as the ordinary 5½-foot tub. This is important. Every Beautyware tub has a patented lip flange for perfect joining with the wall material. Beautyware's lighter weight makes special wall or

floor supports unnecessary and cuts down installation costs. And the embossed serpentine bottom of the Beautyware safety tub is a great advance in home safety.

All Briggs Beautyware lavatories have removable overflow and waste valves. Briggs units are surfaced all over with porcelain enamel—including the under sides. These features give exclusive sanitary protection. And the porcelain surface of Beautyware, acid resisting at no extra cost, has a higher lustre—easier to clean.

Beautyware in gleaming white, in soft, rich, solid tones or exclusive two-tone combinations complements floors and walls in whatever decorative scheme you create.

Functional efficiency and compelling beauty, utility and charm are merged in Briggs Beautyware—modern plumbing fixtures for modern homes. Investigate Briggs Beautyware for bathroom, kitchen and service room!

BRIGGS MANUFACTURING COMPANY
New York: 101 Park Avenue



PLUMBING WARE DIVISION • DETROIT
Chicago: 177 N. Mich. Blvd.

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best in asbestos

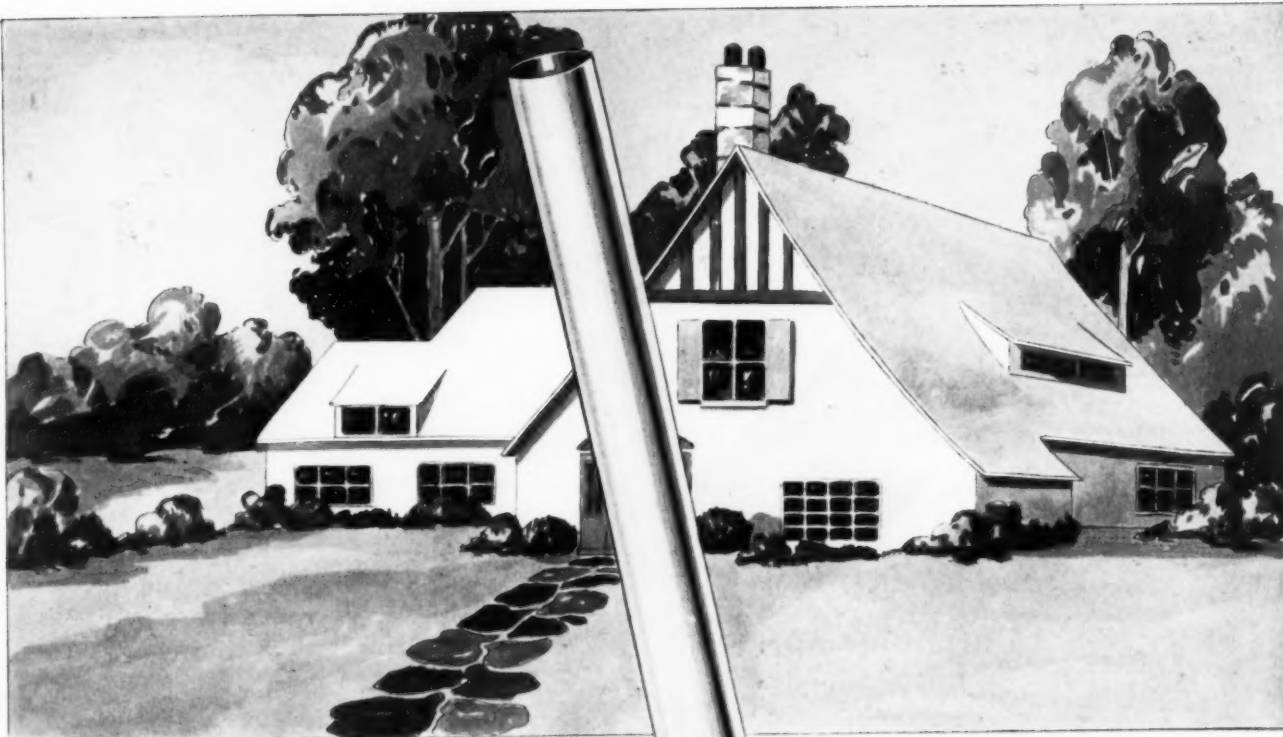
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Keasbey and Mattison made the first asbestos-cement shingles produced in this country. For more than 60 years, K & M have pioneered in the development of Asbestos and Magnesia products. This knowledge of your needs assures you of products specialized to each architectural requirement . . . a complete line . . . made by the recognized leaders.

As leaders in the development of asbestos architectural and building materials, as well as insulation of all types, Keasbey & Mattison Company offers a complete line.

Asbestos Roofing and Siding Shingles
in various sizes, styles and colors
Asbestos Pipe Insulation in sections
Asbestos Insulation in sheets and blocks
Asbestos Insulating Cements
Asbestos Packings and Gaskets
Amroc (Mineral Wool) Insulations
for the home

The K & M representative who calls on you is trained to work with the profession.



a house is **AS YOUNG AS ITS ARTERIES!!**

THE arteries of any building are its plumbing or heating conducting system. Upon their perfect operation depends the maintenance of comfort and convenience in living conditions that any home owner or tenant has the right to expect. The handsome and ultra modern bathroom and kitchen fixtures so much in vogue today can only reach their maximum efficiency if the service they render is in keeping with their design. Their smooth, trouble-free operation must not be impaired by rust-stained, slow running water and clogged pipes.

A BUILDING MAY BE YOUNG IN APPEARANCE, BOTH INSIDE AND OUT—BUT WOEFULLY ANCIENT IN ACTUAL CONVENIENCE. IT IS, AFTER ALL, AS YOUNG AS ITS ARTERIES.

A radiator may be the last word in design but if installed with a piping system that in a few short years will rust, leak and clog will gradually fail in its function as an efficient heating unit.

An installation of STREAMLINE Copper Pipe and Fittings will maintain these modern fixtures in perfect working capacity year in and year out. It will put new life in old buildings and add the latest improvement to new structures. This threadless, rust-proof, clog-proof and leak-proof copper system for plumbing or heating is revolutionary and will actually outlast the building itself. It costs very little more than corrodible materials which sooner or later must be replaced.

VISUAL
PROOF

The STREAMLINE Fitting is the original solder type fitting and the only one that possesses the valuable proof ring feature constituting VISUAL evidence of a leak-proof, perfectly bonded joint, without an actual pressure test.

A catalog of STREAMLINE products is already on file in your office. You will find it in Sweet's or write for our A.I.A. File 29 B4.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN



HOME BUILDERS KNOW

WHAT THEY
WANT!

Listen to Their Demands If You Plan . . Build . . Finance

The demands of 10,000 active home builders are important. They are valuable to you as an Architect . . . a Builder . . . or a Banker. Knowing the wants of these people, you can make every new home a lasting investment in living.

A recent survey illustrates these demands in unquestionable terms. Men and women . . . who actually plan new homes . . . were shown a list of unfavorable features in existing residences. They were asked to check the things they found most troublesome . . . most common. Ten thousand people told just what they thought. Second in the resultant list of "pet peeves" was "not enough wall plugs for lamps and electrical equipment"!

How are you going to answer the cry of your clients for electrical efficiency? There is one lasting and

satisfying solution: The G-E Radial Wiring System. It should be included in every home in which you are interested.

The G-E Radial Wiring System specifies sufficient convenience outlets for every need. It guarantees the usefulness of those outlets by correct wire sizes . . . practically planned circuits. In the homes that incorporate this modern wiring plan, electricity does not go to waste. Appliances and lights receive the current for which home owners are paying.

Make the wiring system tell the story of your judgment and forethought. Insist on the G-E Radial Wiring System. Complete, convincing information will be sent upon request. Write Section CDW-1311, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL
ELECTRIC



RADIAL
WIRING
SYSTEM

APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

A Linoleum SYMPHONY

IN RED, WHITE & BLACK



Junior Ballroom, Hotel Warwick, Philadelphia

N. Snellenburg & Co., the flooring contractors, have been good enough to say the following about this installation: "The design for this linoleum was of a very interesting character. The field is solid black, the circular design is brilliant red, and the horizontal stripes white. It illustrates one of the many decorative ideas which can be created with various colored linoleums especially adapted to modern treatments. The services and cooperation of Sloane-Blabon Corporation were very helpful in creating the design, character and color of this flooring."

THE richness and clearness of the many distinctive Sloane-Blabon colors—Azure Blue, Flame Orange, Sunshine Yellow, Ocean Green, Burgundy Red, Clear White, Jet Black, to name a few—make them particularly effective wherever a modern treatment is called for.

The Junior Ballroom of The Warwick, Philadelphia residential hotel, is a case in point. The colors selected—Burgundy Red, Clear White and Jet Black—harmonize beautifully and help create a room that is distinctly modern without being in the least bit blatant.

The Hotel Warwick is but one of many recent outstanding Sloane-Blabon installations. We shall be glad to send you a list of others, together with linoleum samples and our new Linoleum Handbook. Write W. & J. Sloane, Selling Agents Division, 295 Fifth Ave., N. Y.

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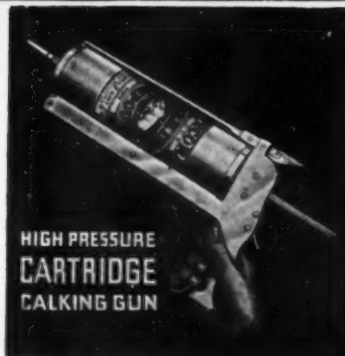
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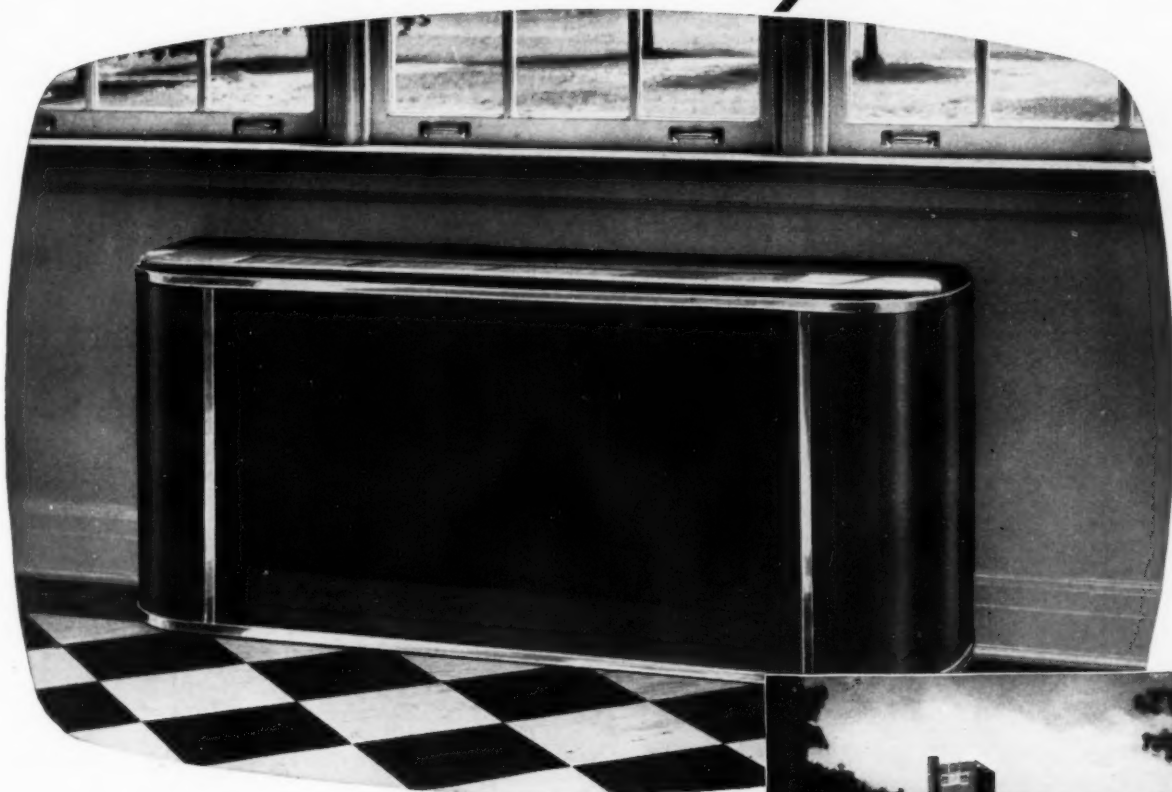
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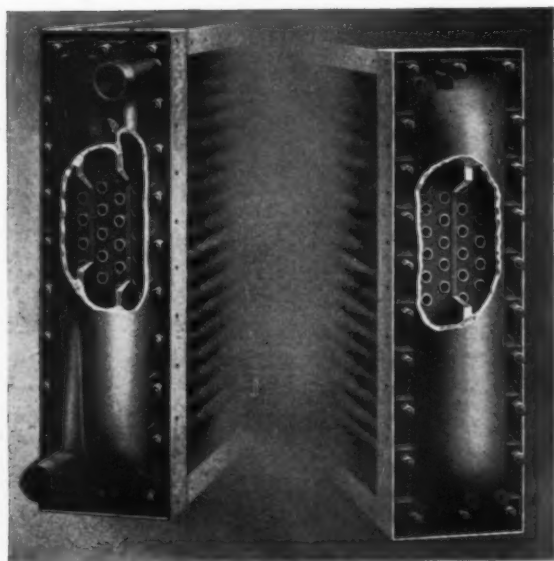
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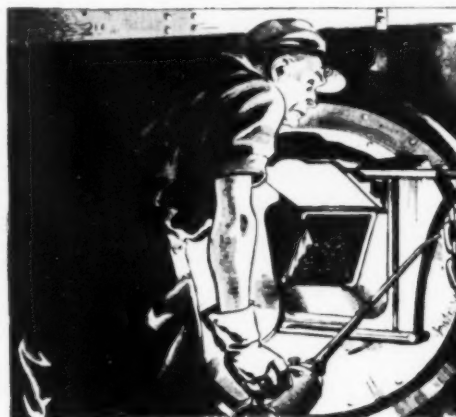


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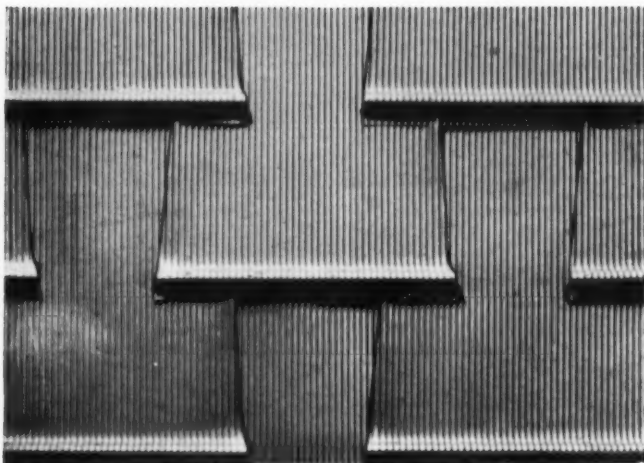
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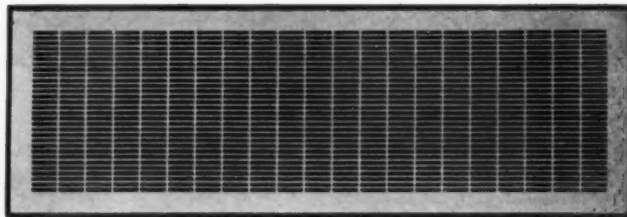
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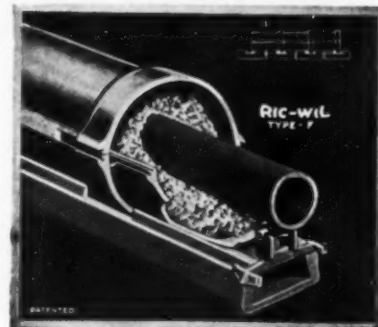
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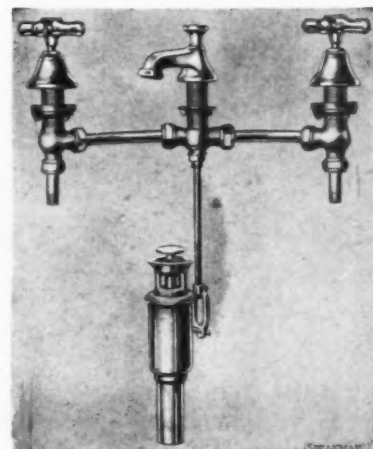
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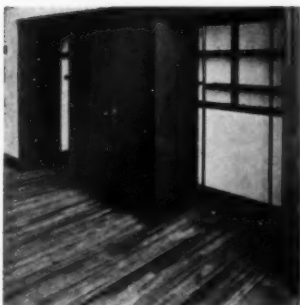
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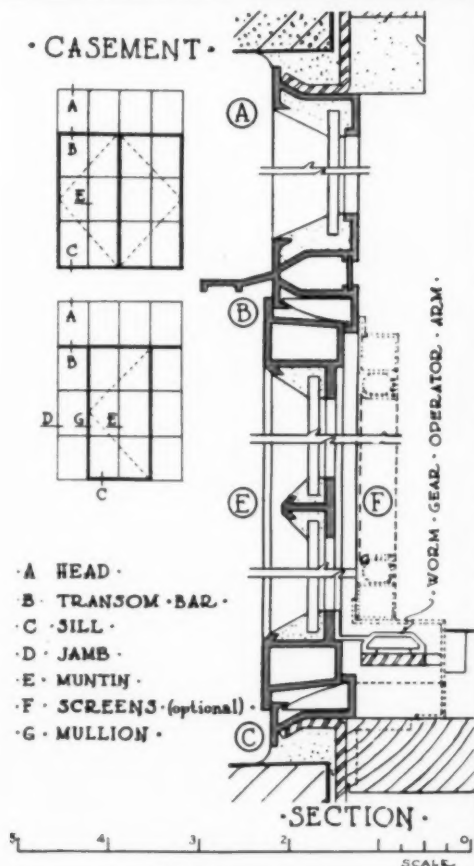
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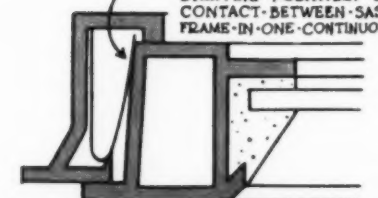
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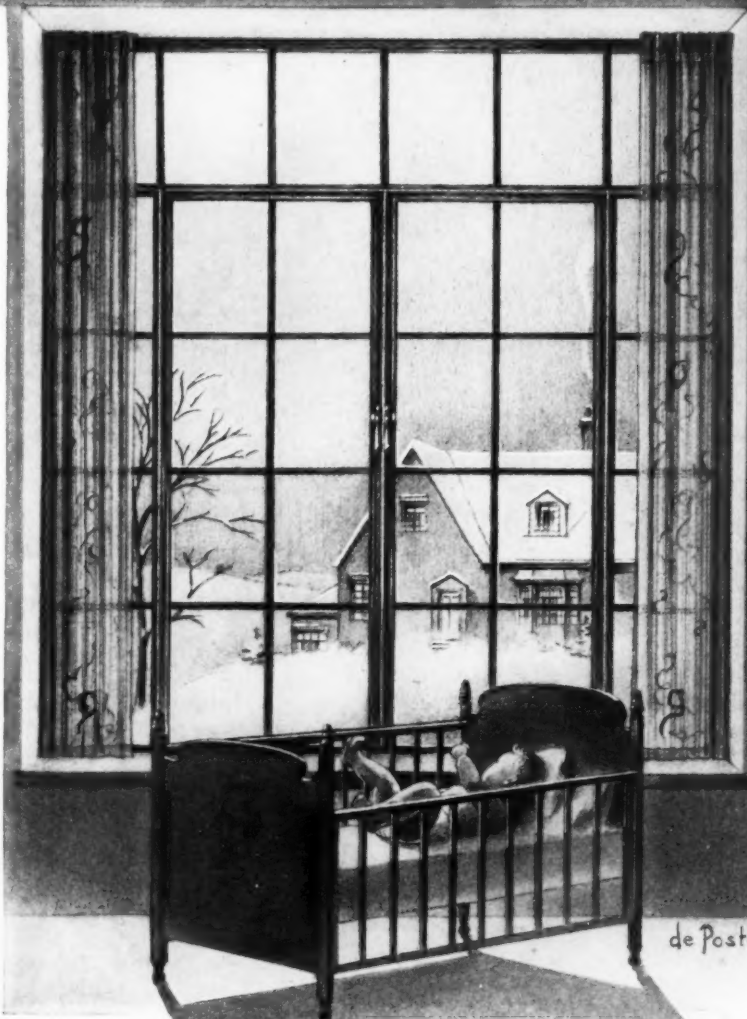
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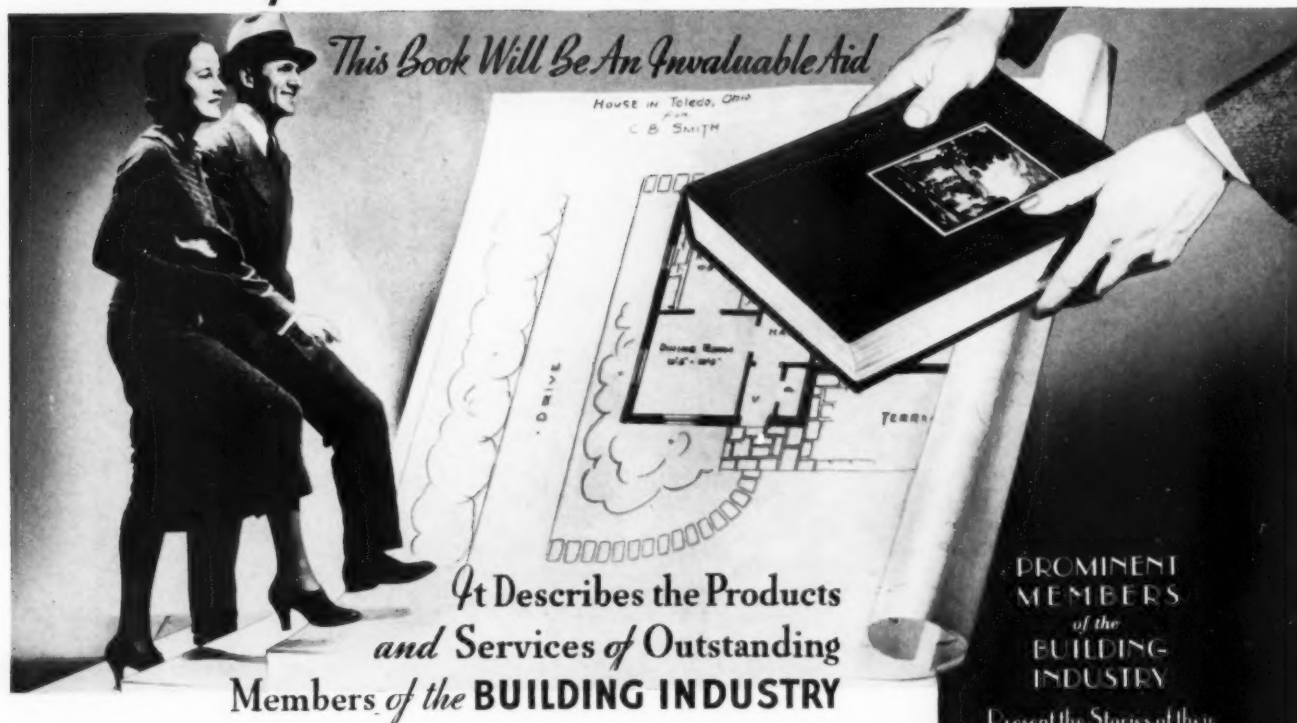


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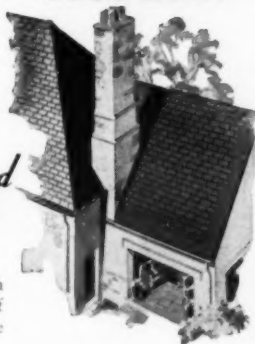
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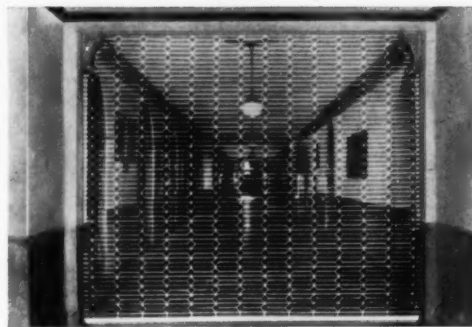
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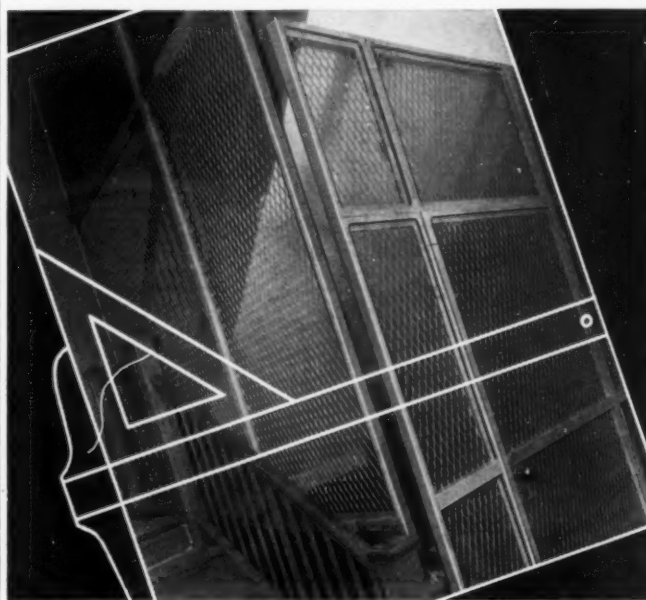


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Why the
LARGEST DEPARTMENT STORE
between Richmond and Atlanta
is well pleased
with its Floors!



Hard Maple floors help this modern department store to maintain its position as "The Predominating Store of the Carolinas."



J. B. Ivey knows that sales stop when shoppers tire—uses Hard Maple for its first floor, where traffic sometimes reaches 21,000 customers in a single day.

ALWAYS important, floors are especially important to a department store. Appearance, sanitation, brightness, smoothness, resilience, easy maintenance and economy must all be seriously considered.

The trudging feet of shoppers, in from all kinds of weather, puts a heavy burden on a floor. Wear occurs rapidly unless the flooring is highly resistant to abrasion. A department store cannot take "time out" for repairs, while people shop elsewhere. And smoothness and resilience are vitally necessary, because tired shoppers do not buy!

J. B. Ivey & Company of Charlotte, N. C., whose traffic may reach 21,000 customers in a day, recently wrote:

"In our present five story building, which we have occupied since 1924, we have used Maple Flooring on our first floor, and on our fourth floor, which is our furniture floor.

"During this period of time, this flooring has been most satisfactory with the exception of trying to maintain the natural light color of Maple Flooring."

This firm appreciates the many requirements of flooring in a modern store—and found them answered in Hard Maple. To brighten their floors, about a year ago they tried steel wool buffing equipment. About this, J. B. Ivey & Company says:

"The machine used with this system has a cylinder of steel wool which removes the soil from the surface of the Maple floor, polishing it and uncovering the natural color, thus making the flooring much easier to keep clean.

"A liquid floor seal is applied

with operation of the machine, which leaves the floor in a clean, smooth condition. With the natural Maple color, the lighting of the floor is much brighter, the whole floor having an appearance of cleanliness, and we are well pleased with our Maple Flooring."

In 12 years, J. B. Ivey had but one problem concerning its Maple floors—that of maintaining their natural light color—and solved it quickly with steel wool buffing equipment.

Countless other performance records prove tough-fibred, tight-grained Northern Hard Maple to be the logical choice for the flooring of stores, schools, office buildings, homes, bakeries, factories, mills, warehouses and similar buildings—for new construction or alterations that modernize.

Northern Hard Maple floors may be laid in strips or blocks—with or without pattern—over screeds, wood or concrete sub-floors. Write for booklet which gives grading rules and complete specifications for laying and finishing.



In J. B. Ivey's fourth-floor Furniture Department, the Maple floors create a pleasing wood background in keeping with the wood of the furniture, which has increased sales appeal when displayed on a floor having the friendly warmth of Hard Maple.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1782 McCormick Building, Chicago, Illinois

Floor with Maple

*The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. **MFMA**



See our catalog data in Sweet's, Sec. 15 53. Our service and research department will gladly assist you with your flooring problems. Write us.

For Lasting Beauty and Low-Cost
Maintenance in Public Buildings—

RUBBER FLOORING!



Color, beauty and "warmth" of decorative effect are added to dignity—in the new Bronx County Court House, New York City—by Goodyear Rubber Floors. Approximately a quarter million feet. Right, the Grand Jury Room; top right, Supreme Court; above, Jurors' Room.

Architect: Jos. H. Freedlander.



IN public buildings—as in stores, shops, private homes and offices—Goodyear Rubber Flooring fulfills the desire for beauty, and satisfies the demands of budget. There are six important reasons why this is so:

DURABILITY—Goodyear Rubber Flooring "stays put"; withstands heavy traffic for years without appreciable wear.

CLEANLINESS—impervious to tracked-in dirt and slush. A damp mop keeps it spotless.

STAIN-RESISTANT—not marred by dropped cigarettes or matches; nor stained by alcohol, ink and most acids.

QUIET—its resiliency minimizes noise and provides comfort underfoot.

BEAUTY—rich two- and three-tone colors that permanently retain their hues.

STYLE—wide choice of designs and borders adaptable to any decorative motif.

Your Choice of Two Types

GOODYEAR RUBBER TILE—laid in individual blocks of any

specified size, shape and color in any desired pattern—a de luxe floor that will endure for many years to come. **GOODYEAR WINGFOOT SHEET RUBBER FLOORING**—laid in continuous lengths at about the same cost as good linoleum—the most economical, permanent covering for large floors; available in more than 100,000 different designs. For full data, write Goodyear, Akron, Ohio—or Los Angeles, California.

See Sweet's 1936 Architectural Catalog for complete specifications

THE GREATEST NAME IN RUBBER
GOODYEAR
RUBBER FLOORING



REVOLVING
DOORS
in

FORMICA *Colors*

FORMICA has been widely used for swing doors in theaters, railway stations and public buildings. It is equally applicable to revolving doors and their housings, and it offers there the same modern effects in color and inlays that it brings to other surfaces . . . The photo shows one of several recent installations in John R. Thompson restaurants. These are worked in dark blue, light blue, and grey. First cost is less than for metal doors; maintenance is negligible; polishing is not required. The installation was made by the International Revolving Door Company of Evansville, Indiana. Garret Cauchois, architect; Gillies Campbell, contractor. . . . We have issued a new portfolio of color treatments. Ask for it.

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4620 Spring Grove Ave. • Cincinnati, Ohio

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FOR BUILDING PURPOSES

Minneapolis-Honeywell Controls will
SAVE
30 to 35%
IN STEAM COST
say Ludlow Building Operators



THE LUDLOW BUILDING, Dayton, Ohio . . . Minneapolis-Honeywell Chronotherm and electrically operated steam valves control temperature in one five-story building and two three-story buildings.

MINNEAPOLIS HONEYWELL

Control Systems

**BROWN INDUSTRIAL INSTRUMENTS FOR
INDICATING, RECORDING AND CONTROLLING**

THE CHRONOTHERM and electrically operated steam valves which you installed for us have resulted in an actual saving in steam bills of 15 percent, and this over a carefully worked out system of hand control which we had instituted two years ago. It is only fair to say that from our experience we believe your devices would show a saving of 30 to 35 percent on steam handled in an ordinary way." So writes the Adam Schantz Sr. Corporation, operators of the Ludlow Building, Dayton, Ohio . . . Testimonials similar to this are not uncommon from users of Minneapolis-Honeywell controls. Not only are important fuel savings effected, but proper, comfortable and healthful temperatures are maintained at all times and in all parts of the building by the Minneapolis-Honeywell Modutrol System. It will pay you and your clients to investigate Minneapolis-Honeywell Controls. The Minneapolis-Honeywell engineer in or near your city is available for consultation at all times without cost or obligation. Minneapolis-Honeywell Regulator Co., 2804 Fourth Ave. So., Minneapolis, Minnesota. Branch and distributing offices in all principal cities.

